# *MP390*

# SERVICE MANUAL

Canon

# Service Manual

## MultiPASS MP360/MP370/MP390
## MultiPASS MP390

Canon

Jan 7 2004

## Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

## Corrections

This manual may contain technical inaccuracies or typographical errors due to improvements or changes in products. When changes occur in applicable products or in the contents of this manual, Canon will release technical information as the need arises. In the event of major changes in the contents of this manual over a long or short period, Canon will issue a new edition of this manual.

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## Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

# Symbols Used

This documentation uses the following symbols to indicate special information:

| Symbol | Description |
|---|---|
| | Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning. |
| | Indicates an item requiring care to avoid electric shocks. |
| | Indicates an item requiring care to avoid combustion (fire). |
| | Indicates an item prohibiting disassembly to avoid electric shocks or problems. |
| | Indicates an item requiring disconnection of the power plug from the electric outlet. |
| Memo | Indicates an item intended to provide notes assisting the understanding of the topic in question. |
| REF. | Indicates an item of reference assisting the understanding of the topic in question. |
| | Provides a description of a service mode. |
| | Provides a description of the nature of an error indication. |

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.

   In the diagrams, represents the path of mechanical drive; where a signal name accompanies the symbol , the arrow  indicates the direction of the electric signal.

   The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.

2. In the digital circuits, '1'is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low".(The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.

   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.
All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

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# Chapter 1 General Description

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# 1.1 Features

## 1.1.1 Overview

0002-2325

**Picture Quality Color Printer**

High quality printing can be accomplished with the Canon Bubble Jet (BJ) method using the maximum 4800 dpi X 1200 dpi resolution.

Various media can be printed at high speed that is maximum 12 pages/minute in black and white or pages/minute in color.

**Convenient ASF**

Up to 100 letter, leagl and A4 size sheets, 30 OHP films, and 10 envelops can be set in the ASF.

**Copy Function**

This machine can be used as a copier which achieves the recording resolution of 600 dpi X 600 dpi for black and white copying or 1200 dpi X 1200 dpi for color copying.

**Full Color & 256 Gradation Grayscale Scanner**

Using MP Toolbox or MP Drivers (ScanGear and WIA driver), full color and 256-gradation grayscale images with a quality of 25-9600 dpi can be read into a computer.

**Photo Printing (MP370, MP390 only)**

By connecting this machine to a digital camera with USB cable, photos can be printed out directly from the digital camera (without using a computer). Moreover, photos can be printed out from Memory Card by inserting Memory Card into a card slot of the machine.

# 1.2 Specifications

## 1.2.1 General Specifications

0004-3559

T-1-1

| Item | MP390 |
|---|---|
| General Specifications | |

| Item | | | MP390 |
|---|---|---|---|
| | Printer | | YES |
| | Scanner | | YES |
| | Copy | | YES |
| | Fax | | YES |
| | Memory Card | | YES |
| | Memory Card Slot | | Direct |
| | Applicable Media | | |
| | | PCMCIA(ATA) | NO |
| | | Compact Flash | TYPE I/II |
| | | Micro Drive | YES |
| | | Smart Media | YES |
| | | Memory Stick | YES |
| | | SD/MMC | YES |
| | | xD-Picture Card | YES (via. CF Adapter) |
| | Data Storage | | |
| | | READ | YES |
| | | WRITE | YES |
| | Scan To Memory Card | | NO |
| | Photo-Direct print | | YES |
| | Applicable Image | DCF | YES |
| | | CIFF | YES |
| | | JFIF | YES |
| | | TIFF (RAW-RGB/YCC) in compliance with Exif | NO |
| | Print Mode | INDEX | YES |
| | | All Image | YES |
| | | Select Range | YES |
| | | DPOF | YES |
| | Layout | 2 frames | NO |
| | | 4 frames | NO |
| | | 8 frames | NO |

| Item | | MP390 |
|---|---|---|
| Power Consumption | Maximum | Approx. xxW |
| | Standby | Approx. xxW |
| Noise | Standby | None |
| | Copy | 48 dB(A) max. |
| Durability | Unit | 4,000 sheets or 5 years |
| | Scanning Section | 4,000 sheets |
| | Printing Section | 4,000 sheets |
| External Dimension | Including Tray | 17 7/8(W) in x 21 1/2 in.(D) x 11 1/4 in.(H) (454(W)x547(D)x286(H)) |
| | No Tray | 17 7/8(W) in x 14 1/8 in.(D) x 9 7/8 in.(H) (454(W)x358(D)x249(H)) |
| Weight | Standard | Approx. 18.5lb./8.4 kg |

## 1.2.2 Scanner Specifications

0004-5151

T-1-2

| Item | | | MP390 |
|---|---|---|---|
| Reading System | | | Flatbed |
| Reading System | | Sensor Type | 1200dpi staggered CCD |
| ADF | | | NO |
| Resolution | | Optical Resolution | 1200*2400dpi max |
| | | Reading Resolution | 9600*9600dpi max |
| Gradation | | | |
| bit | Color | Input | 48bit |
| | | Output | 24bit |
| | Gray | Input | 16bit |
| | | Output | 8bit |

| Item | | MP390 |
|---|---|---|
| Maximum Document Size | | 8 1/2in. x 11 3/4in. (216mm×297mm) |
| Effective Scanning Width | | 8 1/2 in. (214mm) |
| Local Scan Driver | | YES |
| | TWAIN | YES |
| | WIA (Windows XP) | YES |

## 1.2.3 Printer Specifications

0004-5153

T-1-3

| Item | | MP390 |
|---|---|---|
| ASF | | YES |
| | Size | A4, A5, B5, 4"*6", L size, LTR, LGL |
| Printing Resolution | | 4800X1200 dpi |
| Printing Speed | sec./page | 18 ppm (BK)<br>12 ppm (Color) |
| Printing Direction | | Bi-direction |
| None printable area (mm) | | 1/8in.(3.4mm) right/left edge, 1/8in.(3mm) top, 1/4in.(5mm) bottom |
| | Envelop | 1/8in.(3.4mm) right/left edge, 1/8in.(3mm) top, 1in.(26.5mm) bottom |
| Printing Cartridge | | ZF533 |
| | Product Name | BCI-24BK BCI-24Color |
| Ink Remaining Detection | | YES |
| | Detection Method | Warning by counting dots<br>3 steps (indication) |
| Paper Capacity | | 50 pages |
| Borderless Printing | | YES |
| Silent Mode Printing | | YES |

| Item | MP390 |
|---|---|
| CD-R Label Printing | NO |

## 1.2.4 Copy Specifications

0004-5155

T-1-4

| Item | | | MP390 |
|---|---|---|---|
| Copy Print Resolution | Black & White | | 600*600 dpi |
| | Color | | 1200*1200 dpi |
| Copy speed | Ink Jet | Black & White (Fast) | 18ppm |
| | | Color (Fast) | 12ppm |
| Grey Scale | | | 64 scales |
| Scanning Density Adjustment | | | YES |
| | Manual | | 9 positions |
| Multiple Copies | | | 99 |
| Reset RE Ratio | | | YES |
| Enlarge | | Max. | YES |
| | | 5" x 7" to LTR | YES |
| | | 4" x 6" to LTR | YES |
| Reduction | | 100% | YES |
| | | A4 to LTR | YES |
| | | Min. | YES |
| Zoom | | | YES |
| | Zooming Range | | 25-400% |
| | Auto Magnification Selection | | YES |
| Image Quality | | B & W | FAST, NORMAL, FINE |
| | | Color | FAST, NORMAL, FINE |
| Energy Saving Mode | | | YES |
| Image Combination | | | YES |

| | | |
|---|---|---|
| | 2 in 1 | YES |
| | 4 in 1 | NO |
| Image Repeat (Auto/Manu) | | YES/YES |
| Mirror Image | | YES |
| Seal Copy | | YES |
| Name Card Copy | | YES |
| Postcard Copy | | YES |
| Borderless Copy | | YES |
| Poster | | NO |
| Fit to page | | YES |
| Entire Document | | YES |

## 1.2.5 Communication Specifications

0004-6704

T-1-5

| Item | | MP390 |
|---|---|---|
| Applicable lines | PSTN | YES |
| | Others (Private Line,etc) | NO |
| Transmission method | | Half-duplex |
| Error correction | | ITU-T ECM |
| Transmission control protocol | | ITU-T T.30 binary protocol<br>ITU-T V.8 protocol, V.34 protocol |
| Coding method | Black/white | MH,MR,MMR,JBIG |
| | Color | JPEG |
| Modem | Modem IC | CONEXANT FM336Plus |
| | Speed | 33.6kbps |

| Item | | MP390 |
|---|---|---|
| Modulation method | G3 image signals | ITU-T V.27ter(4.8k, 2.4k bps)<br>ITU-T V.29(9.6k, 7.2k bps)<br>ITU-T V.17(14.4k, 12.0k, TC9.6k, TC7.2k bps)<br>ITU-T V.34(33.6k, 31.2k, 28.8k, 26.4k, 24.0k, 21.6k, 19.2k, 16.8k,14.4k, 12.0k, 9.6k, 7.2k, 4.8k, 2.4k bps) |
| | G3 procedure signals | ITU-T V.21(No.2) (300 bps)<br>ITU-T V.8 300 bps<br>ITU-T V.34 1200 bps, 600 bps |
| Minimum transmission time | | 10 ms(G3), 0ms(ECM) |
| Transmission output level | | From -8 to -15 dBm |
| Receive input level | | From -3 to -43 dBm |

T-1-6

**Time required for transmission protocol**

| Mode | Pre-message*1 protocol | Post-message*2 protocol (between pages) | Post-message*3 protocol (after pages) |
|---|---|---|---|
| V.8/V.34 | approx.6 sec. | approx.1 sec. | approx.1 sec. |
| T.30 | approx.12 sec. | approx.4 sec. | approx.3.5 sec. |

*1 Time from when other facsimile is connected to the line until image transmission begins.

*2 Post-message (between pages): Time from after one document has been sent until transmission of the next document starts if several pages are transmitted.

*3 Post-message (after last pages): Time from after image transmission is completed until line is switched from facsimile to telephone.

## 1.2.6 Color Communication Specification

0004-6708

T-1-7

| Item | | MP390 |
|---|---|---|
| Color Communication | Scanning document size | A4 |
| | Printing paper size | A4 |
| | Resolution | 200dpi |
| | Coding | JPEG |
| | Color space | CIE-LAB |
| | Picture element | 8bit |
| | Sub sample | 4:1:1(=LAB) |

## 1.2.7 Function

0004-6711

T-1-8

| Item | | | MP390 |
|---|---|---|---|
| Dialling | Numeric button | | YES |
| | Hook button | | NO |
| | Auto dialling | | YES |
| | | One-touch | NO |
| | | Coded speed | YES(40) |
| | | Programmable Number of Digits | 40 |
| | | Group dialling | NO |
| | Redial | | YES |

| Item | | | MP390 |
|---|---|---|---|
| Transmission | Dual access | | YES |
| | | Max. File No. of Reservation | 1 |
| | Polling Tx | | NO |
| | Broadcast transmission | | NO |
| | Delayed Tx | | NO |
| | Confidential Tx | | NO |
| | Relay broadcasting originating | | NO |
| | Relay broadcasting | | NO |
| Reception | FAX/TEL switching | | YES |
| | | Method | CNG detection |
| | | Message | NO |
| | | Pseudo CI | NO |
| | | Pseudo ring | YES |
| | | Pseudo ring back tone | YES |
| | Built in answering machine | | NO |
| | Answering machine connection | | YES |
| | Remote Rx | | YES |
| | Telephone exchange function | | NO |
| | Speaker phone | | NO |
| | Memory lock Rx | | NO |
| | Polling Rx | | NO |
| | Confidential Rx | | NO |
| | Reduction setting for Rx | | YES |
| | | Automatic reduction | 70 to 100% |

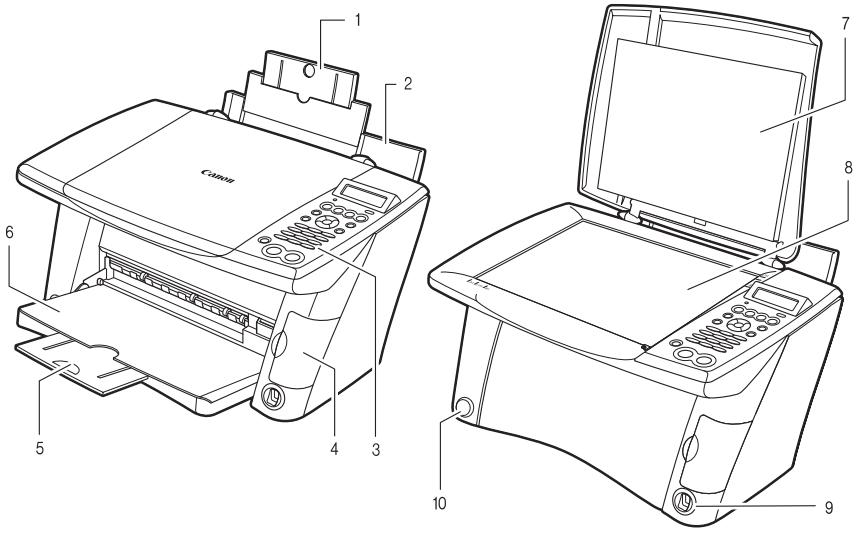
| Item | | | MP390 |
|---|---|---|---|
| Memory backup | Backup contents | | Dial registration data<br>User data<br>Service data<br>Time, etc. |
| | Backup IC | | 128kbit SRAM |
| | Backup device | | Lithium battery DC 3.0V/ 600mAh |
| | Battery life | | life Approx.5 years |
| | Image data backup | | NO |
| | Image memory | | Approx.?? MB |
| Activity management | User report | Activity management report | YES(Every 20 communications) |
| | | Activity report (Tx/Rx) | YES |
| | | Directory dial lst | YES |
| | | One-touch speed dialling list | NO |
| | | Coded speed dialling list | NO |
| | | Group dialling list | NO |
| | | Memory clear list | YES |
| | | User's data list | YES |
| | | Document memory list | YES |
| | | Multi activity report | NO |
| | Service report | System data list | YES |
| | | System damp list | YES |

# 1.3 Overview

## 1.3.1 External View

0004-4359

Exterior




F-1-1

1. Tray extension
Supports paper loaded in the multi-purpose tray. Pull it out before loading paper.

2. Multi-purpose tray
Used to load paper.

3. Operation panel
Displays the operating status of the machine. It is also used to change or check the settings of each function. For details,

4. Card slot cover
Covers the card slot. Open this cover when inserting a memory card or CompactFlash card adapter containing a memory card into the card slots.

5. Tray extension
Supports printouts. Grasping the notch, pull this out before copying orprinting. When not being used, keep it closed in the paper output tray.

6. Paper output tray
Printouts are output to this tray. Open the tray before you start copying or printing, by pressing the Open button. If closed, the tray will automatically open when the machine starts to copy or print. When not being used, keep it closed in the machine.

7. Document cover
Covers the platen glass. Open this cover when loading a document on the platen glass.

8. Platen glass

Used to load a document to be processed.

9. Direct print port (for digital camera)

digital camera or digital video camcorder to the machine when printing images directly from the camera.

10. Open button

Press this button to open the paper output tray accommodated in the machine.

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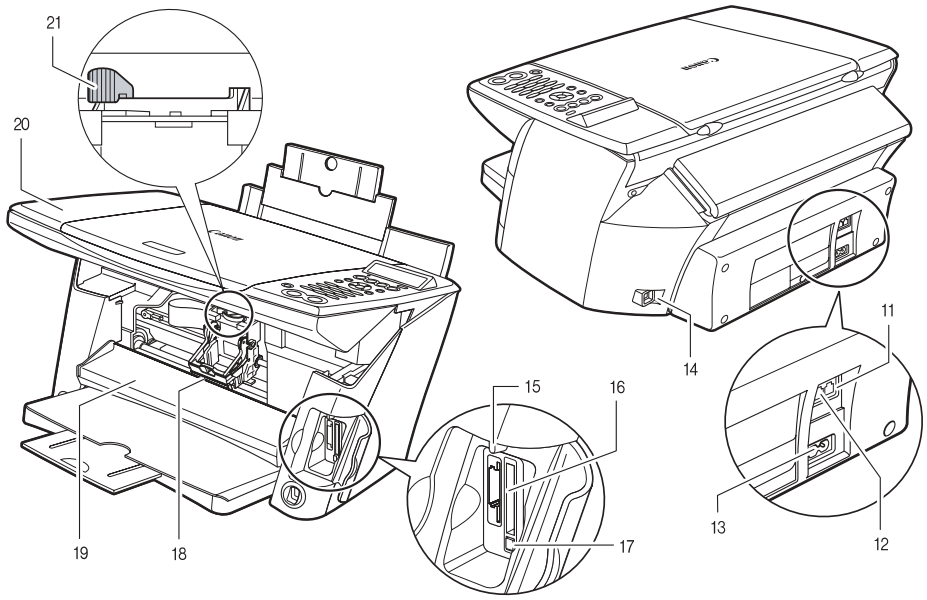
⚠

The paper output tray will not open when the machine is placed on a tilted surface.

---

Rear view and interior




F-1-2

11. External device jack

Connects the external device.

12. Telephone line jack

Connects the telephone line.

13. Power connector

Used to connect the power cord to the machine.

14. USB connector (for computer)

Used to connect a computer to the machine when printing or faxing from or scanning to the computer.

15. Access lamp

Lights when a memory card is inserted into the card slot. This lamp flashes while the machine is reading or writing data from/to the memory card. When the machine finishes reading or writing the card, the lamp shuts off.

16. Card slot

Insert a memory card or CompactFlash card adapter containing a memory card into these slots when photo printing. The machine is equipped with two kinds of card slots.

17.Memory card eject button

Press this button to remove the CompactFlash card adapter, Microdrive memory card, or CompactFlash from the card slot.

18. Print head holder

Used to install a print head.

19. Inner cover

Open this cover when setting the paper thickness lever, replacing the ink tanks, or clearing a paper jam.

---

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Printing with the inner cover open may result in injury.

---

20. Scan unit

Lift this unit until it locks into place when the inner cover needs to be opened.

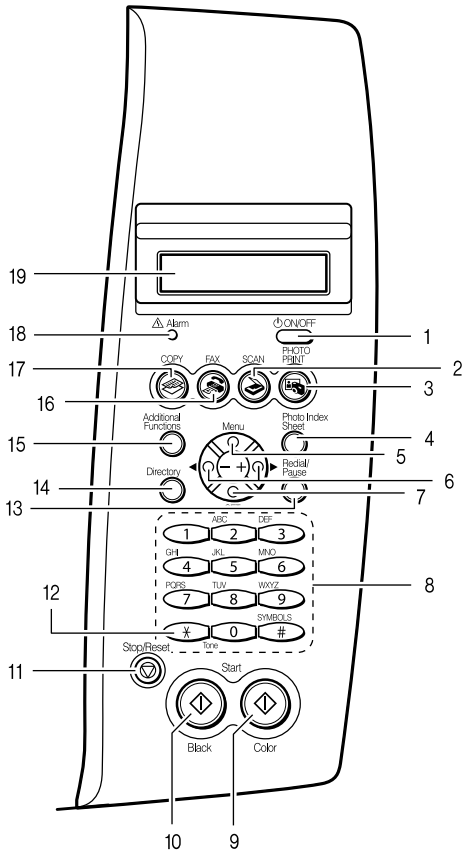
21. Paper thickness lever

Switches the distance between the print head and paper according to the paper type. Adjust the lever to the position appropriate for the paper loaded.

## 1.3.2 Operation Panel

0004-4367

The followings are the names and functions of keys on the operation panel.




F-1-3

1. [ON/OFF] key

Turns the machine ON and OFF. Before turning ON the machine, make sure the scan unit is closed. When turning ON and OFF, keep the key pressed for at least one second.

2. [SCAN] key

Switches the machine to scan mode. In scan mode, the machine scans a document to your computer according to the settings selected. This keyis used when the machine is connected to a computer.

3. [PHOTO PRINT] key

Switches the machine to photo print mode.

4. [Photo Index Sheet] key

Switches the machine to Photo Index Sheet mode.

5. [Menu] key

Accesses the settings to customize operation of your machine.

6. [◀(-)], [▶(+)] keys

Scroll through menu selections, and increase or decrease the number of copies or the image file number.

7. [Set] or [OK} key

Selects or confirms settings. Also, press this key to recover to standby mode after correcting paper jams and other errors that stop printing.

8. Numeric keys

Enter numerical values such as the number of copies, as well as fax/telephone numbers and characters.

9. [Color] key

Starts color copying, scanning, or faxing.

10. [Black] key

Starts black & white copying, scanning, or faxing.

11. [Stop/Reset] key

Cancels operations and returns the machine to standby mode.

12. [Tone] key

Switches temporarily to tone dialing. Also changes the mode when entering characters.

13. [Redial/Pause] key

Redials the last dialed number. Also enters pauses between or after numbers when dialing or registering numbers.

14. [Directory] key

Use when dialing fax/telephone numbers registered in the directory.

15. [Additional Functions] key

Switches the machine to user mode, in which you can customize the ink level warning, various fax settings, maintenance, etc.

16. [FAX] key

Switches the machine to fax mode.

17. [COPY] key

Switches the machine to copy mode.

18. Alarm lamp

Flashes when the machine is turned ON or OFF, when an error occurs, or when paper or ink has run out.

19. LCD (Liquid Crystal Display)

Displays messages, menu selections, and the operation status.

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* When unplugging the power cord, be sure to press [ON/OFF] first. When you press [ON/OFF], the print head is protected by the cap to prevent the ink from drying. Turn the machine OFF with [ON/OFF]. When unplugging the power cord, be sure to unplug it after turning the machine OFF with [ON/OFF].
* When not using the machine for a long time, to prevent degradation of the print head, print or copy in both black & white and in color, or perform print head cleaning, about once a month.
* Numerous nozzles are installed in the print head for high-precision printing. Just as the uncapped tip of a ballpoint pen or marker becomes dry and unusable if not used for a long period of time, the print head nozzles become blocked by dried ink. Periodically printing or cleaning the print head can prevent this blockage.
* The power cannot be turned OFF with [ON/OFF] when the machine is operating.
* Your machine performs a print head cleaning every time you plug in the machine. This ensures optimum print quality but also consumes a small amount of ink during the cleaning process.
* The machine cannot receive faxes when the power is turned OFF.

---

# 1.4 Consumables

## 1.4.1 Ink tanks

0002-3979

Ink tanks
Black:BCI-24 Black
Color:BCI-24 Color

NOTE:
For optimum printing results and to avoid printing problems, Canon recommends that you only use the Canon Ink Tanks described in this guide.

# Chapter 2 Technical Reference

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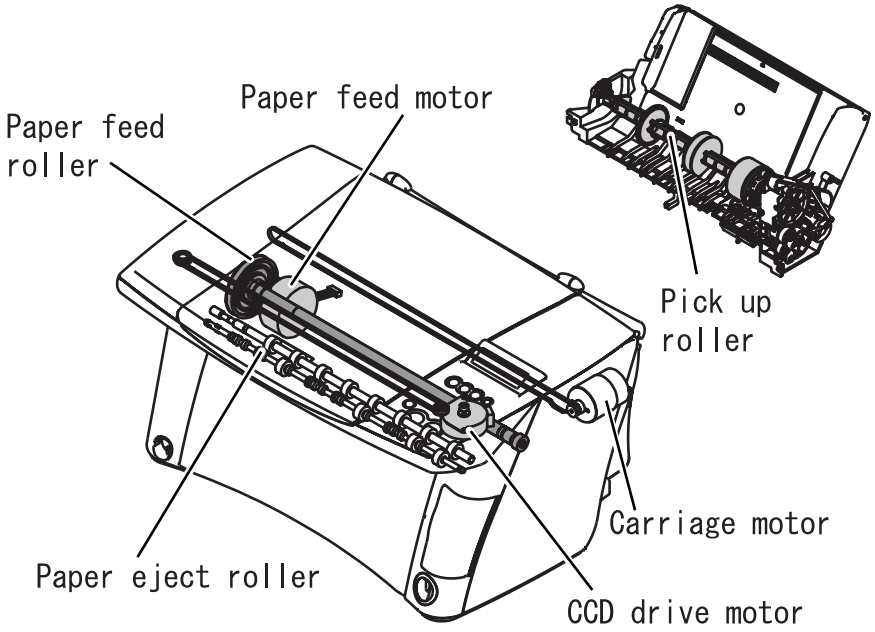
# 2.1 Component Layout

## 2.1.1 Printer Mechanical Section

0003-2046

The printer's mechanical parts consist of the followings:



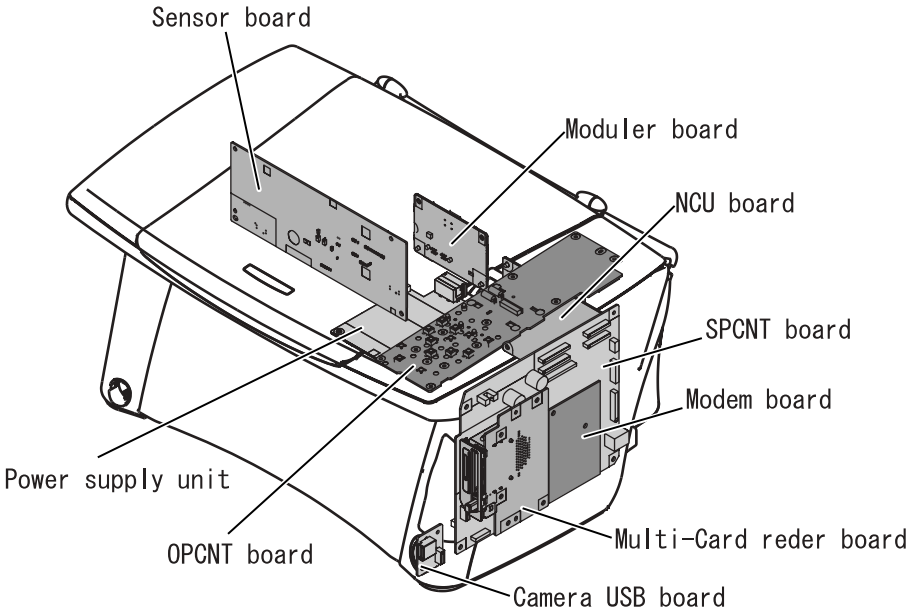

F-2-1

## 2.1.2 Electrical Layout

0004-4414

The electrical parts are laid out as follows:

- SPCNT board: Controls the entire facsimile machine.
- OPCNT board: Detects keyboard operation and displays machine information.
- Multi-card reader board: Interface with memory card.
- Camera USB board (MP370, MP390 only): Interface from USB connector for printing images directly from a digital camera
- Sensor board (include sub PCB): Detects the state of sensors, and relays the cable to the printer assembly.
- Power supply unit: Supplies power to the units and assemblies.
- NCU board: Controls the telephone line.
- Modular board: Relays the telephone line to the NCU board.
- Modem board: interface with telephone line

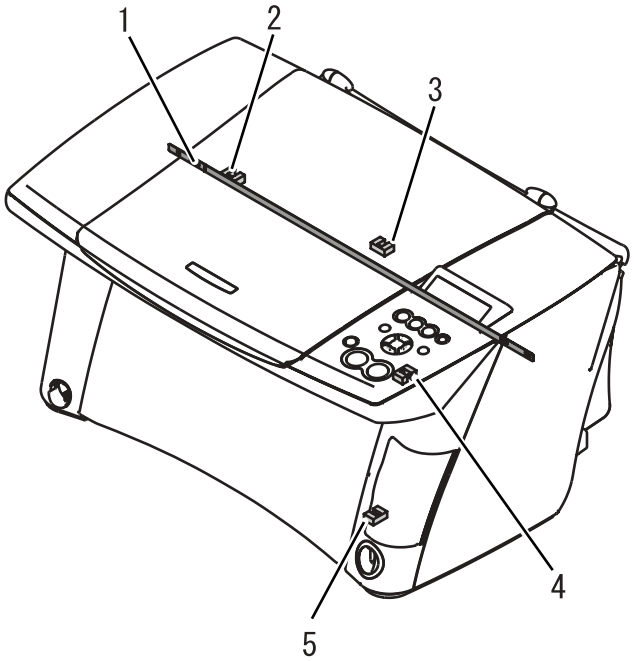



F-2-2

## 2.1.3 Sensor Layout

0002-5820

The sensors detecting document/paper-fedding condition or ink presence/absence are mounted.




F-2-3

1. Carriage encoder film:
Detects the state of carriage unit.

2. Paper feed encoder film:

Detects the state of paper feed roller.

3. Paper edge sensor:

Detects the state of paper feeding and delivery.

4. Cover sensor:

Detects the state of flatbed unit.

5. ASF sensor:

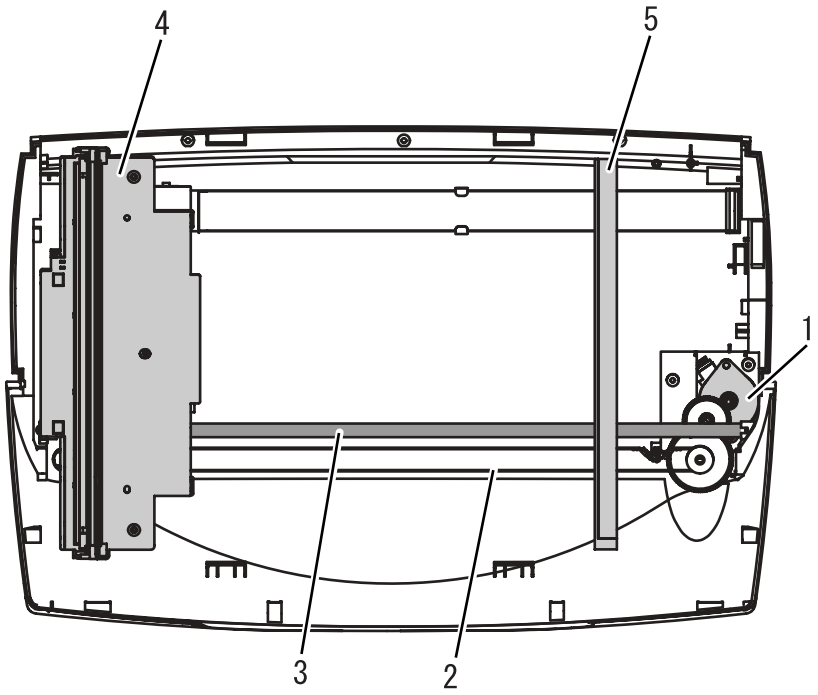
Detects the state of ASF.

# 2.2 Scanner Mechanism

## 2.2.1 Scanning Section Layout

0003-2048

The scanning section scans documents that are to be sent or copied.




F-2-4

Names and functions of parts

1. CCD drive motor
The CCD drive motoris used to drive the CCD.

2. CCD drive belt
The CCD drive belt is used to convey the driving force of the CCD drive motor to CCD.

3. CCD shaft
The CCD shaft is used to keep the direction of the driving force of CCD.

4. CCD
The CCD scans the image data from the document, converts it to Red,Green and Blue serial data, and transmits it to the SPCNT board. CCD has 1,200 dpi scanning resolution.

5. White sheet

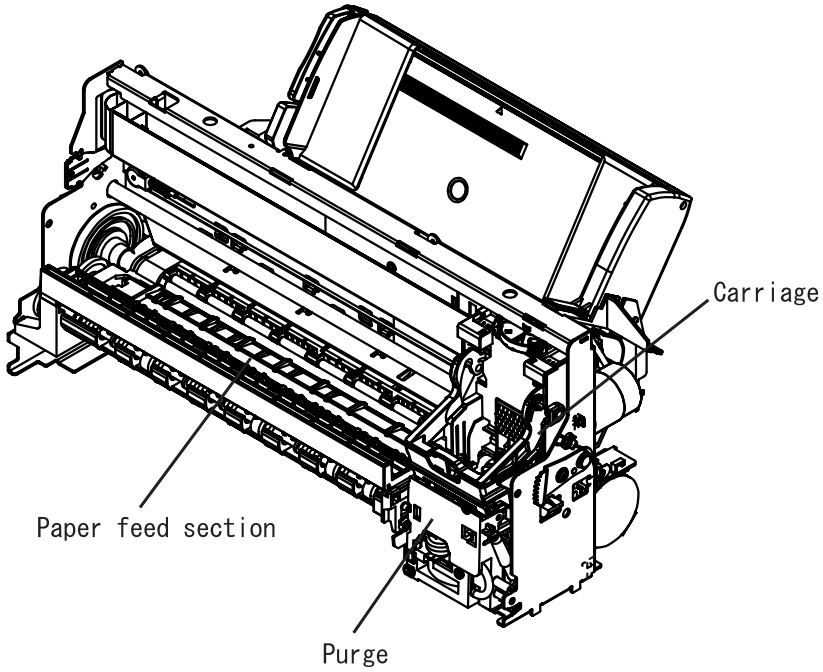
This white sheet is used as a whiteness reference when pre-scanning documents.

# 2.3 Printer Section

## 2.3.1 Printer Mechanical Section

0002-0302

The printer's mechanical parts consist of the BJ cartridge section, carriage section, purge section, and paper feed section. Each part is explained below.




F-2-5

## 2.3.2 Carriage Section

0002-0326

The carriage secures the printhead including 2 ink tanks in place.
The carriage belt driven by the carriage motor (DC motor) moves the carriage horizontally back and forth across the paper.
Regarding the carriage's position control, the initial position is detected when the carriage goes against the right wall which is the home position. After that, the carriage position is detected by reading the pulse from the encoder film.
The paper spacing position is read from the carriage position when the carriage goes against the left wall.

## 2.3.3 Purge Section

0002-0328

The purge section, driven by a dedicated purge motor, consists of the wiper, pump, cap and carriage lock.
The wiper maintains the head face surface to ensure high-quality printing. The ink suction feature enables the ink to be readily ejected from the nozzles.
When the BJ cartridge is not in use, the nozzles are protected by caps, and the carriage is locked in place.
The motor's running direction controls the ink suction operation or capping/wiping/valve open/closing operation.

## 2.3.4 Paper Feed Section

0002-0331

The paper feed section consists of the paper loading section, paper feed section, and paper eject section.

**1) Paper Loading Section**

Paper is loaded automatically by the ASF (auto sheet feeder).

The feeder is designed accommodate various sizes of paper (as large as LGL), picking up individual sheets and forwarding them to the feeding block.

**2) Paper Feed Section**

The paper feed section, driven by the paper feed motor, keeps the sheet of paper flat and horizontal on the platen and rotates the feed roller to move the paper horizontally to and beneath the printhead.

**3) Paper Ejection Section**

After printing, paper is ejected onto the eject tray by the eject rollers.

After the sheet of paper leaves the paper feed rollers, the eject rollers take over to eject the paper.

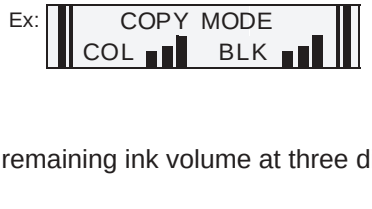
## 2.3.5 Ink Sensor

0002-1323

This machine is not equipped with the ink sensor.

The machine detecs the remaining amount of ink in the ink tank by counting the number of ink dots discharged. If the number of ink dots dischedged reached a cerain level, an ink low message will be displayed on the LCD. When the copies are not clear or nothing prints, it is time to replace the ink tank. [Did you replace the ink tank] message will be displayed on the LCD after replaicng the ink tank. Select [Yes], and then reset the ink dots counter. If you select [No], ink dots conunter will not be reset therefore will not be able to detect an accurate amount of the ink remained in the tank.

You can check the reamingn amount of the ink in the ink tank using copy key, scan key to change the mode.




F-2-6

## 2.3.6 Cleaning Mode and Suction Amount

0002-0866

Printhead cleaning is performed effectively and efficiently depending on conditions in order to prevent print errors caused by bubble, dust, or ink clogging.

Cleaning is performed before starting to print except at the following timing:

- Dot count suction: Performed after paper ejection

- Manual cleaning/refreshing: Performed user operation
- Unit delivery: Performed when scanner unit is close.

T-2-1

| Cleaning Mode | | |
|---|---|---|
| Condition | Details | Suction Amount |
| At delivery | Suction when head is first installed after factory shipment. | 0.36(Bk)<br>0.52(Color) |
| Dot count suction | When prescribed dot count since the last suctions reached (Bk/colors counted separately) | 0.12(Bk)<br>0.14(color) |
| Timer suction-0*1<br>(Bk only) | If 24 to 336 hours have elapsed since previouse suction | |
| Timer suction-1<br>(Bk/color)*2 | If 180 to 339 hours have elapsed since previouse suction (Bk/color counted separately) | |
| Manual cleaning<br>(Bk/color/all colors) | * Panel operation (all colors only)<br>* Driver operation(Bk/color/all colors selectable) | |
| Timer suction-2<br>(all colors) | If 336 to 1080 hours have elapsed since previouse suction | 0.36(Bk)<br>0.28(Color) |
| Timer suction-3<br>(all colors) | If 1080 to 2160 hours have elapsed since previouse suction | 0.75(Bk)<br>0.28(color) |
| Timer suction-4<br>(all colors) | If 2160 hours or more have elapsed since previouse suction | 1.50(Bk)<br>0.28(color) |
| Uncapped for more than one hour when Soft ON<br>(all colors) | | 0.24(Bk)<br>0.52(color) |
| When replacing ink tank<br>(Bk/color) | | |
| When replacing printhead<br>(all colors) | When printhead is removed/ installed. | 0.36(Bk)<br>0.52(color) |

| | | |
|---|---|---|
| Printhead refreshing<br>(Bk/color/all colors) | * User operation<br>(all colors only)<br>* Driver operation<br>(Selectable from Bk, color, and all colors) | 1.50(Bk)<br>0.52(color) |

*1: In case of time suction when 24 to 60 hours have elapsed since previous suction, the sequense will be complete after five suctions are performed after factory shipment. After that, timer suction will be performed after 60 to 180 hours elapse.

*2: Suctions will be performed separately for Bk and color with their timer counted separately since previouse suction. Therefore, suction mode may differ between Bk and color in some cases.

# Chapter 3 Disassembly and Assembly

# Contents

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# 3.1 Attention to be Paid During Assembly/Disassembly

## 3.1.1 Safety Cautions

0002-0114

**Electrical shock**

In order to prevent any risk of electrical shock, always be sure to check that the power cord and modular jack have been removed. Also, remove all cables connecting to the computer. When conducting service that requires the main unit to be powered on, be sure to wear some kind of earthing, such as a wrist strap, etc. Otherwise, there is a danger of conduction and electrical shock.

Parts which are generally likely to cause electrical shock are as follows:

* Power supply unit primary (supplied with AC voltage)
* Telephone line primary
* LBP engine high voltage contacts (for high voltage during developing and transfer)

**High temperature**

In order to prevent burns during disassembly, allow at least ten minutes, after the power has been switched off, for the high temperature components to cool down.

General high temperature components are as follows:

* Motors
* Power supply unit
* Elements on driver ICs, etc., on PCBs (in particular, ICs with heatsinks)
* BJ cartridge aluminium plate (for BJ cartridge engine models)
* Fixing unit and peripheral covers (for LBP engines)

**Battery Replacement**

The batteries must be replaced correctly to avoid explosion. Do not replace any battery with one not indicated for the machine, ie., use one of the same type or equivalent. Be sure to dispose of used batteries according to local laws and regulations.

**Fire**

It is dangerous to throw lithium batteries and parts and components containing flammable substances, such as cartridges, etc., into fire. Such parts and components must be disposed of in accordance with local laws and regulations.

**Ignition**

When using solvents such as alcohol, etc., while conducting service, there is a danger of fire igniting from heat from internal circuitry and from sparks. Before using any such solvents, be sure to switch of the power and allow time for high temperature parts to cool down. Make sure that there is sufficient ventilation when working with solvents.

**Movable parts**

In order to prevent accidents with movable parts, be sure to remove the power cable when conducting service that requires disassembly. Also, take care that personal accessories and hair, etc., are not caught in any moving parts.

## 3.1.2 General Cautions

0002-0386

**Damage due to electrostatic discharge**

This machine contains contact sensors and printed circuit boards that use ROMs, RAMs, custom chips and other electronic components that are vulnerable to damage by electrostatic discharge.

Be careful to avoid any damage from electrostatic discharge when conducting service that requires disassembly.

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**Static electricity warning**

Electrostatic discharge can destroy electronic components and alter electrical characteristics. Plastic tools and even your hands, if they are not earthed, contain sufficient static electricity to damage electronic components.

---

The following materials may be used as countermeasures against electrostatic discharge:

* An earthed, conductive mat,
* An earthed writs-strap,
* Crocodile clips for the purpose of grounding metallic parts of the main unit.

For service conducted on the user's premises, etc., where such countermeasure materials are not available, the following countermeasures may be employed.

* Use anti-static bags for the storage and carrying of PCBs and electrical elements.
* Avoid silk and polyester clothing and leather-soled shoes, favoring instead cotton clothes and rubber-soled shoes.
* Avoid working in a carpeted area.
* Before beginning the work, touch the grounded earth terminals of the main unit in order to discharge any static electricity.
* Use a wrist-strap and earth the metal parts of the main unit.
* PCBs and electrical elements must be lifted around the edges and their terminals must not be touched.

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**Caution against electrical shock while working with power on**

In cases where service must be carried out with power on, via a connected power cable, be sure to wear an anti-static wrist-strap or other earth, in order to prevent an electrical path being created through your body.

---

**Application of grease**

Grease must not be applied to any parts that are not so designated. If grease comes into contact with the rubber cap

of the purge unit or wire, the BJ cartridge nozzle may become blocked and the cartridge rendered unusable. Also, never use any other than the specified type of grease. Otherwise, plastic parts and rubber parts may melt or be deformed.

**Attaching and removing cables**

Attaching and removing cables with the power still on may cause breakdowns and should be avoided. In particular, flat cables are likely to cause short circuits. When attaching or removing cables, always be sure to turn the power off.

## 3.1.3 Product-inherent Cautions

0002-0290

**Prevention of ink-soiling**

Be careful when handling the BJ ink cartridge nozzle, the ink pad, head cap, head wiper and waste ink pad. Residual ink may soil the main unit, working surfaces, your hands and clothes, etc. The ink is water-soluble, but because it contains pigments, it will not wash out of clothes.

The ink does not contain any substances that are harmful to humans, but does not contain organic solvents (isopropyl alcohol 67-63-0, diethylene glycol 111-46-6, glycerin 56-81-5 and ethylene glycol 107-21-1). If the ink should accidentally get into someone's eyes, rinse the affected eye with plenty of clean water and seek medical attention. If a large quantity of ink is accidentally swallowed, seek medical advice immediately. In such a case, let the doctor know exactly what is written on the BJ cartridge label.

**Conductivity of the ink**

The ink used in the BJ cartridge is conductive. This means that, if the ink leaks, mechanical parts should be wiped with a dampened paper towel or similar and electrical circuits wipes with issue paper so that all ink is removed from below the IC chips.

If power is switched on while ink is leaking on the electrical circuits, the circuitry may short out and be damaged. If ink is leaking, the power must be switched off.

**Caution when handling the carriage encoder film**

(1)Do not leave grease on the cartridge encoder film (code strip)

The presence of grease will prevent correct reading of the slit in the carriage encoder film, thus causing an error. If grease is found on the cartridge encoder film, clean it thoroughly using alcohol.

(2) Do not bend or scratch the carriage encoder film (code strip).

If the carriage encoder film has been bent until it shows a white line or a scratch is found on it, replace it.

(3) Stretch the leaf spring excessively when removing/ fitting the carriage encoder film (code strip).

The carriage encoder film is secured in place under tension by means of a leaf spring. If the spring is stretched excessively in the

direction of the arrow, you will not be able to secure the cartridge encoder film correctly next time.

You will have to stretch the leaf spring, but do not do so in excess when removing or fitting it.

**Caution when replacing the waste ink absorber**

The waste ink absorbers are designed to sop up any excess ink ejected during the cleaning operation or during ink

squirting for maintenance, in order to maintain the good printing quality of the BJ cartridge. The volume of ink absorbed is counted and these data stored in the EEPROM on the SPCNT board. Once the volume is judged to have reached 100%, the message "CHECK PRINTER" (error code ##342) will be displayed, and printing will stop, in order to ensure that the volume of ink absorbed does not exceed the allowed limit. To clear this error, you need to replace the waste ink absorbers and rest the waste ink volume counter.

**Removing the Purge Unit**

When removing the purge unit, the carriage shaft must be removed in advance.

The purge unit cannot be removed without first removing the carriage shaft. If the purge unit is removed forcibly, it may be damaged, or the carriage shaft may be damaged, causing uneven print density in printouts.

## 3.1.4 Caution when replacing the SPCNT board

0002-0905

To replace the SPCNT board, perform the following:

**a) Caution before replacing**

You will need to execute 'All clear' after replacement. Be sure to print out the following data as necessary.

**a-1) Image Data Stored in the Image Memory**

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The image data stored in the image memory will be lost as soon as the power is turned off. Check to be sure that all data has been printed out before turning off the power.

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**a-2) User reports**

Press the Menu key; then, use the ◀▶ key to select 'REPROT/LIST', and use the ◀▶ key to select the type of list to print out.

**b) Caution after replacing**

1) When you have replaced the SPCNT board, be sure to execute 'All clear'. For instructions, see All Clear (Action in the Event of Abnormality.)
2) After you have executed 'All clear', enter the appropriate data as necessary by referring to the list you have previously printed out.

## 3.1.5 Shipping the Main Unit

0002-0422

If you must ship the machine as after making repairs, be sure to go through the following:

(1) See to it that the BJ cartridge (printhead) remains fitted in the carriage.

(2) Press the On/Off key to turn off the power, and fix the carriage in its home position; then, disconnect the power

cord.

⚠

If you leave the BJ cartridge (printhead) alone on its own, the ink can start to cake. Be sure to keep the BJ cartridge fitted in the carriage in the course of shipment.

On the other hand, if the carriage is not fixed to its home position, it can move right/left during shipment, possibly importing stress on the paper feed encoder film. Check to make sure it is fixed in its home position.

# 3.2 Assembly and Disassembly

## 3.2.1 Disassembly/Assembly

0002-0424

As a rule, refer to the Parts Catalog for instructions on how to disassemble and assemble the machine. The discussions that follow are limited to those components that are thought to require replacement relatively more often than others.

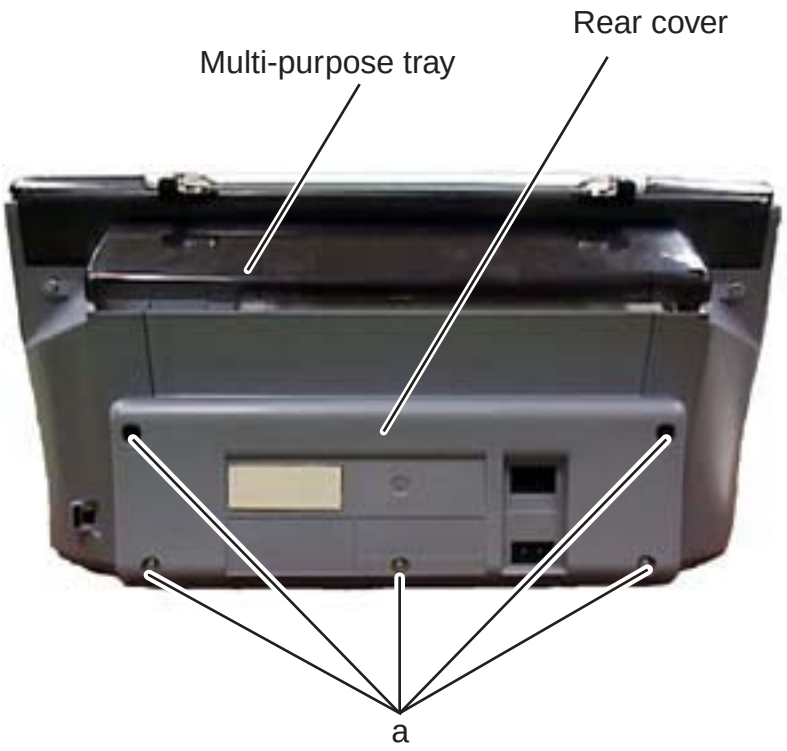
## 3.2.2 Basic Disassembly

0002-5250

(1) Remove Multi-purpose tray.

(2) Remove 5 screws (a), and detach the rear cover.

MP390: detach claws and remove the speaker.




F-3-1

(3) Lift the scanner unit and insert a precision flat bladed screwdriver in an upright posture in a narrow gap between the right front cover and the right side cover. Exert an outward pressure by twisting the screwdriver to detach the claw (b). Then detach two claws (c) in descending order.

F-3-2

F-3-3

(4) Insert the precision screwdriver into the gap shown in the below photo. Detach the claw (d) and remove the right front cover.

F-3-4

---

Reference

The right front cover has 7 claws, and remaining claws will unhook by themselvs after detaching outer claws in step 3 and 4. Please refer to the below image for the position of claws (view of the reverse side).

F-3-5

---

(5) Insert a precision flat bladed screwdriver in an upright posture in a narrow gap between the left front cover and

the left side cover. Exert an outward pressure by twisting the screwdriver to detach the claw (f). Detaich 3 claws (g) in descending order and remove the left front cover.

F-3-6

---

Reference

The left front cover has 8 claws. The remaining nails will unhook by themselves after detaching outer claws in step 5. Please refer to the below image for the position of claws (view of the reverse side).

F-3-7

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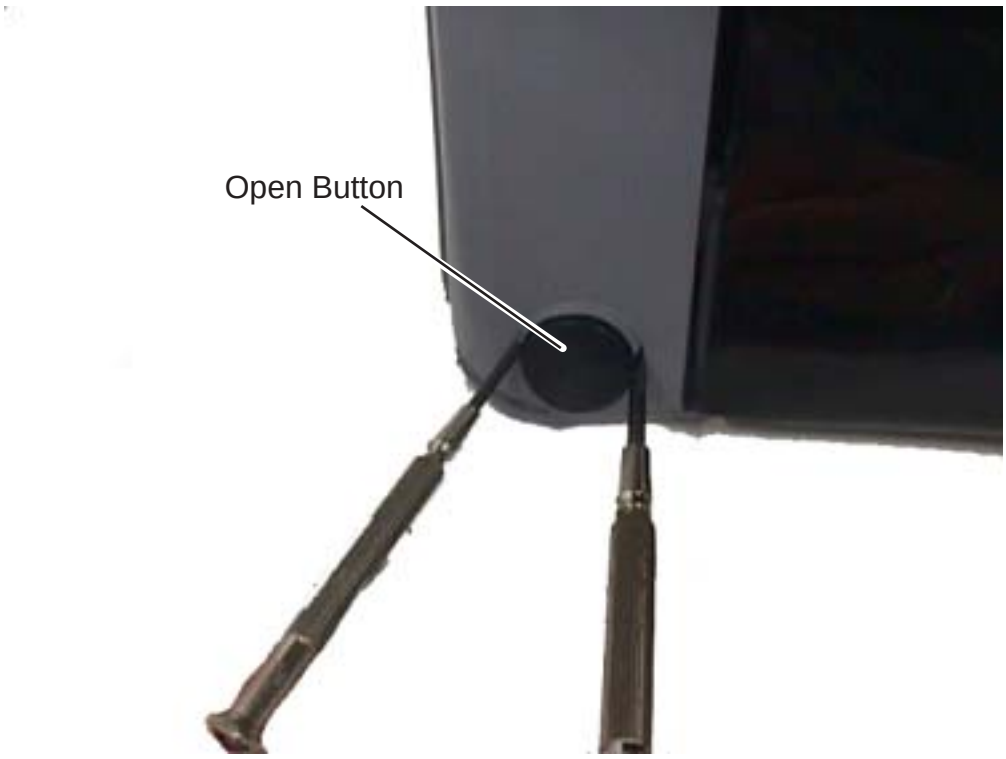
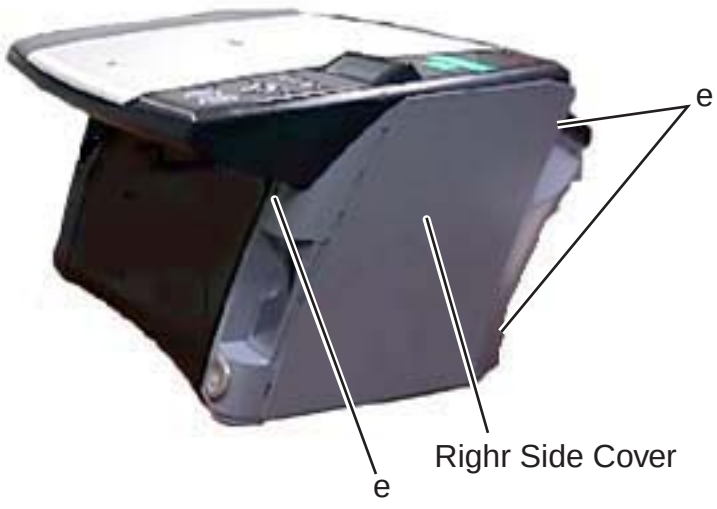
(6) Insert two precision flat bladed screwdriver into holes on the both sides of Paper output tray open button. Remove

the button by pulling it out from the machine.




F-3-8

(7) Remove 3 screws (e) (one in the front and two in the back), and then remove the right side cover.



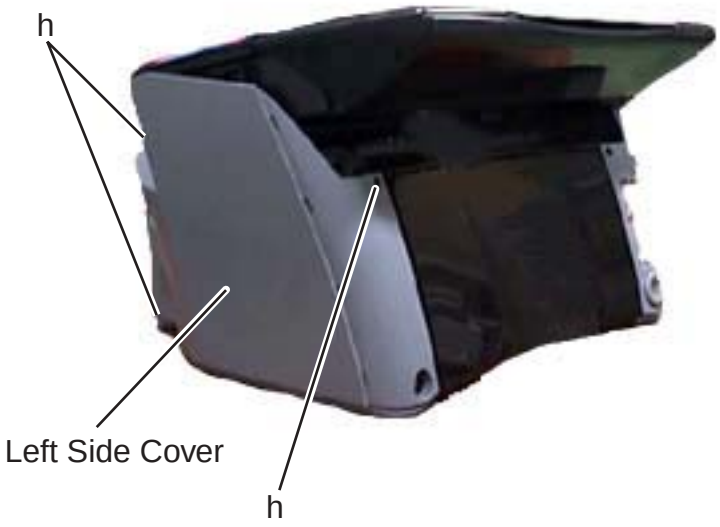

F-3-9

⚠

The side cover has a claw inside. So lifting the side cover will make it easier to detach it from the main unit. The side cover works as a bearing of the scanner unit. Please be careful not to get your finger caught between the scanner unit and the side cover when removing the side cover.

F-3-10

(8) Remove 3 screws (h) (one in the front and two in the back) and then remove the left side cover.
Lifting the left side cover will make it easier to detach it from the main unit.

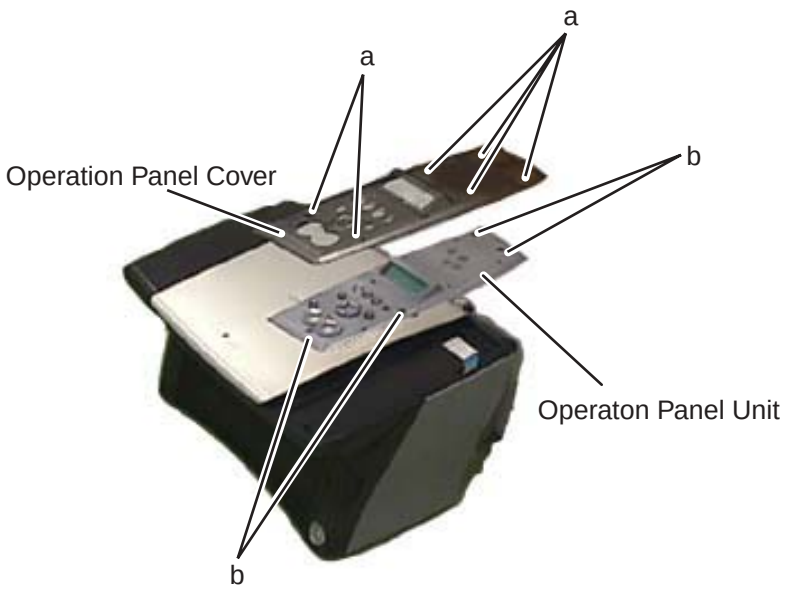



F-3-11

## 3.2.3 Operation Panel Unit

0002-5257

(1) Remove 6 claws (a) and then remove the operation panel cover.
(2) Remove 4 screws (b).
(3) Remove Connector J1 from the operation panel unit, and then remove the operation panel unit from main unit.

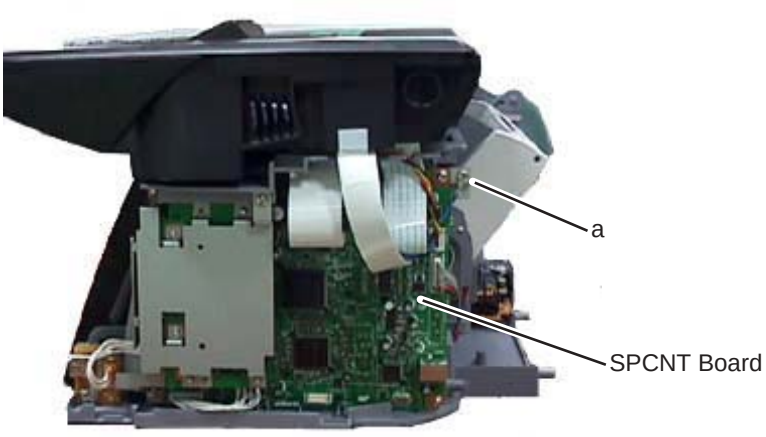



F-3-12

## 3.2.4 Scanner Unit

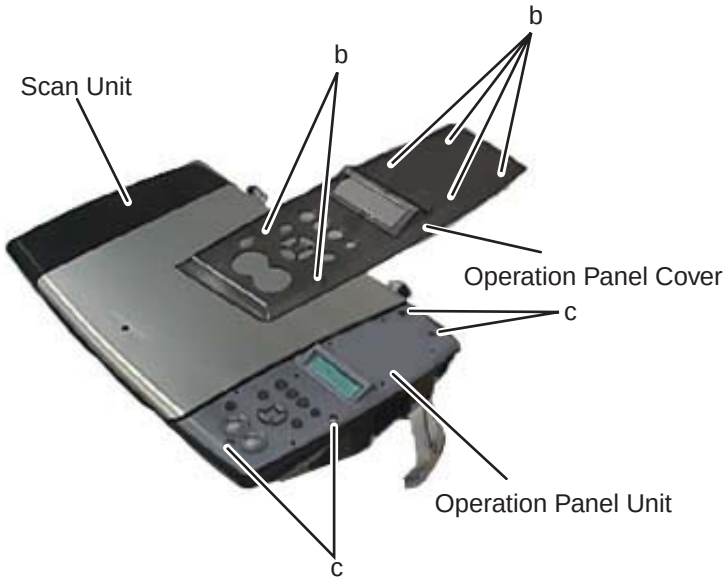
0002-5262

(1) Perform step 1 thorugh step 3 in the Basic Disassembly, and then remove the right front cover.
(2) Remove the screw (a) and then remove a grounding cable.
(3) Remove Connector JCCD1, JCCD2, JPANEL1 from the SPCNT Board.




F-3-13

(4) Remove the scanner unit from the main unit.
(5) Remove 6 claws (b) and then remove the operation panel cover.
(6) Remove 4 screws (c) and then remove the operation panel unit from the scanner unit.

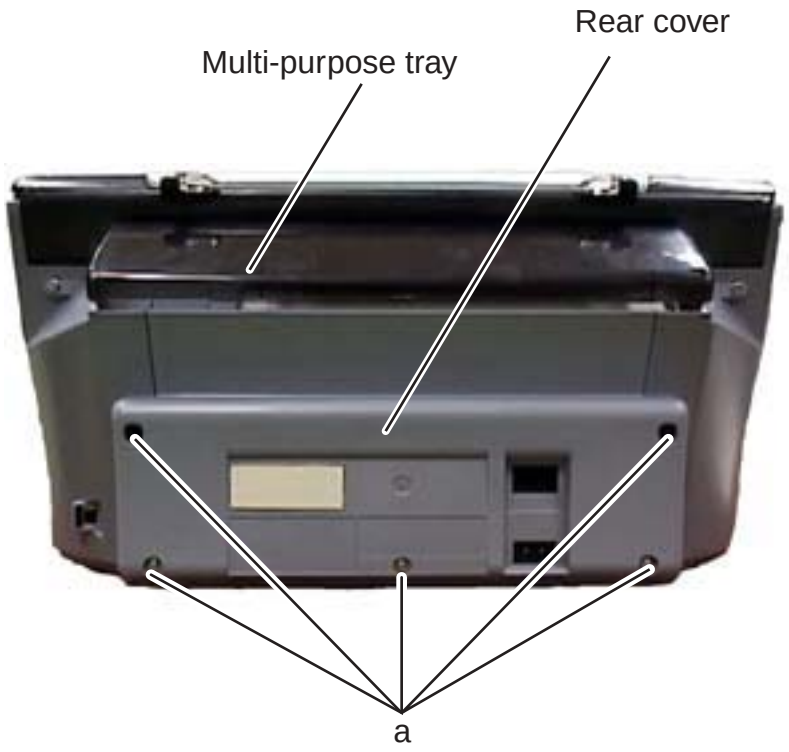



F-3-14

## 3.2.5 NCU Board, Modular Board

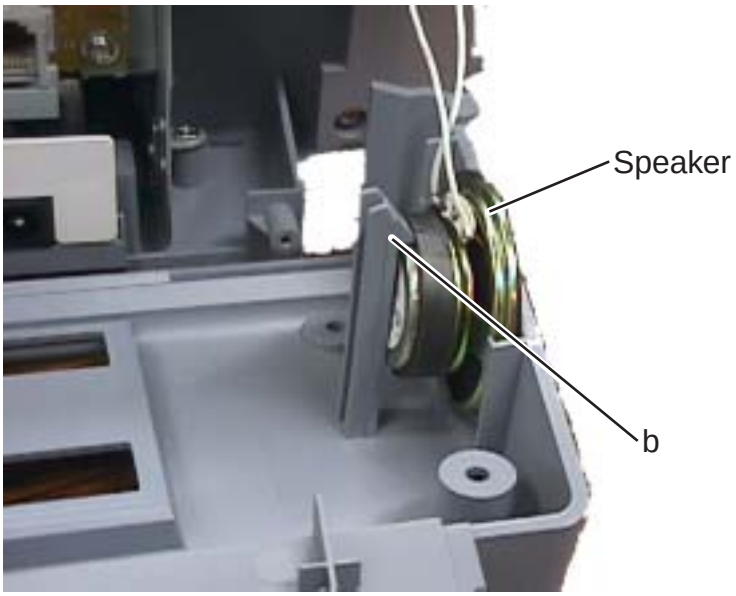
0004-2911

(1) Remove 5 screws (a) and then remove the rear cover.




F-3-15

(2) Remove the claw (b) and then remove a speaker from the rear cover.



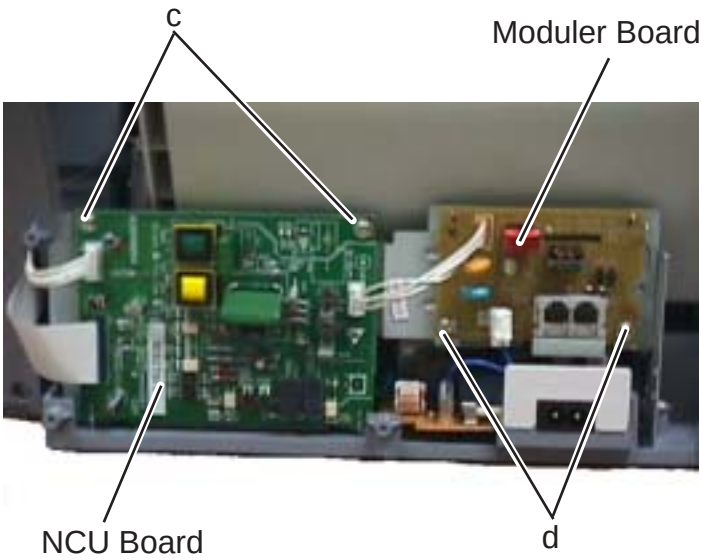

F-3-16

(3) Remove all cables connected to NCU Board.

(4) Remove two screws (c) and then remove NCU Board.

(5) Remove connector J3 from the modular board.

(6) Remove 2 screws (d) and then remove the modular board.

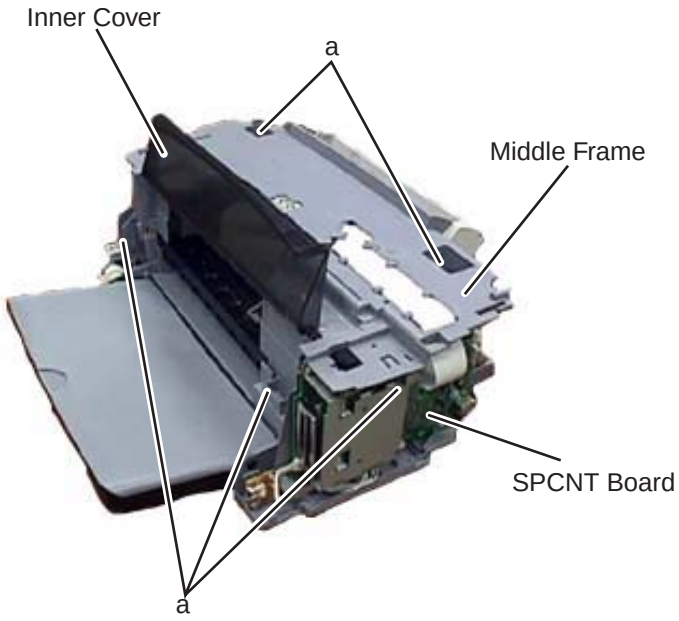



F-3-17

## 3.2.6 SPCNT Board

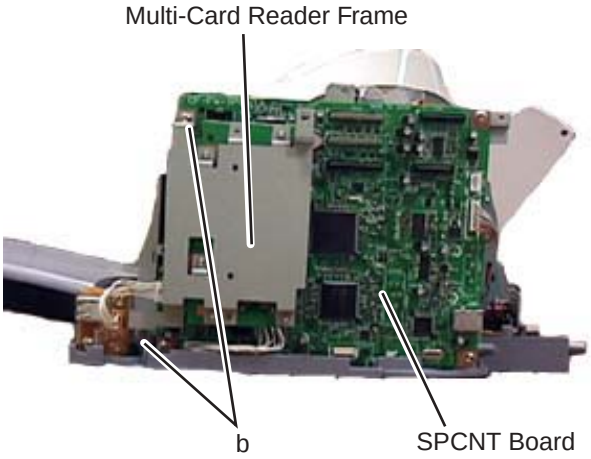
0002-5266

(1) Perform the Basic Disassembly procedures.
(2) MP390: Remove NCU and the modular board.
(3) Perform step 1 through step 4 of the disassembly procedures of the scanner unit.
Then remove the scanner unit from the main unit.
(4) Remove the inner cover from the middle frame.
(5) Remove Connector JHEAD1, JHEAD0, JEXIT1 from the SPCNT Board.
(6) Remove Connector JTRY1 from the sensor board.
(7) Remove the screw (a) from the middle frame.
(8) Remove Connector JCARD1, JPSU1, JUSB2 from the SPCNT Board.



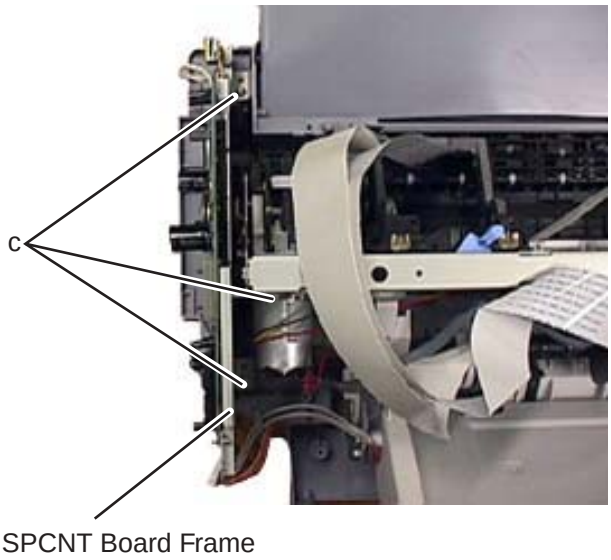

F-3-18

(9) Remove 2 screws (b) and then remove the multi-card reader board together with its frame from the main unit.




F-3-19

(10) Remove 3 screws (c) and then remove the SPCNT Board together with its frame from the main unit.



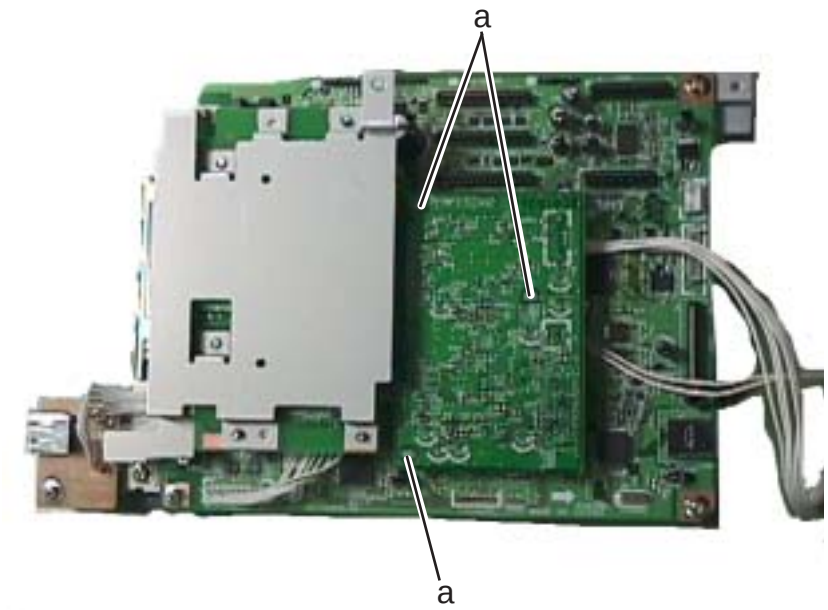

F-3-20

## 3.2.7 Modem Board

0004-2908

(1) Remove the SPCNT Board from the main unit.

(2) Remove 3 claws (a).



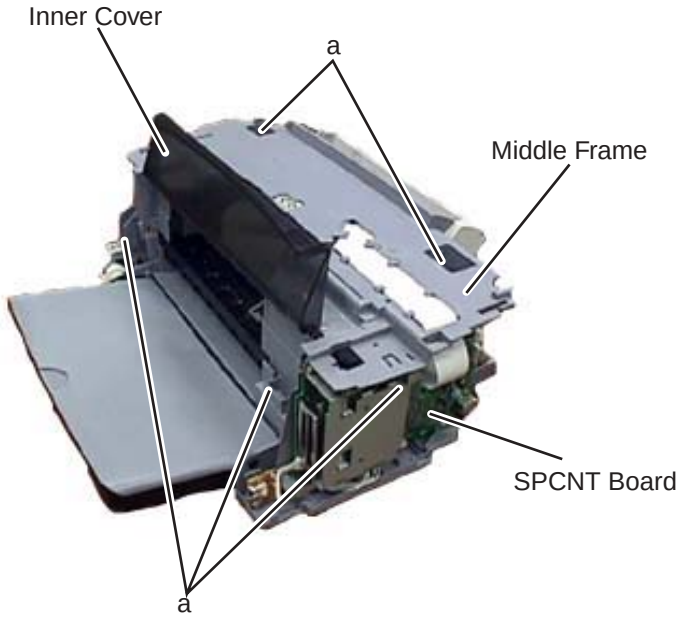

F-3-21

(3) Remove Connector JMODEM1 and then remove the modem board.

## 3.2.8 Print & ASF Unit

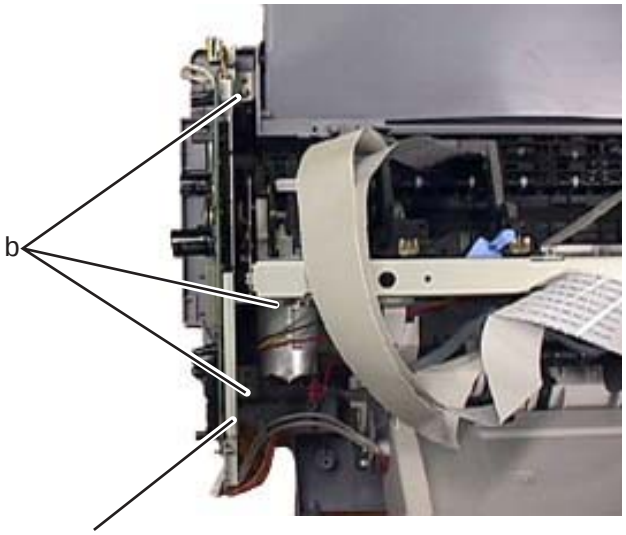
0002-5279

(1) Perfom the bais disassembly procedures.
(2) MP390: Remove NCU and the modular board.
(3) Remove the scanner unit.
(4) Remove the inner cover from the middle frame.
(5) Remove Connector JHEAD1, JHEAD0, JEXIT1, and JPSU1 from the SPCNT board.
(6) Remove 5 screws (a) from the middle frame.




F-3-22

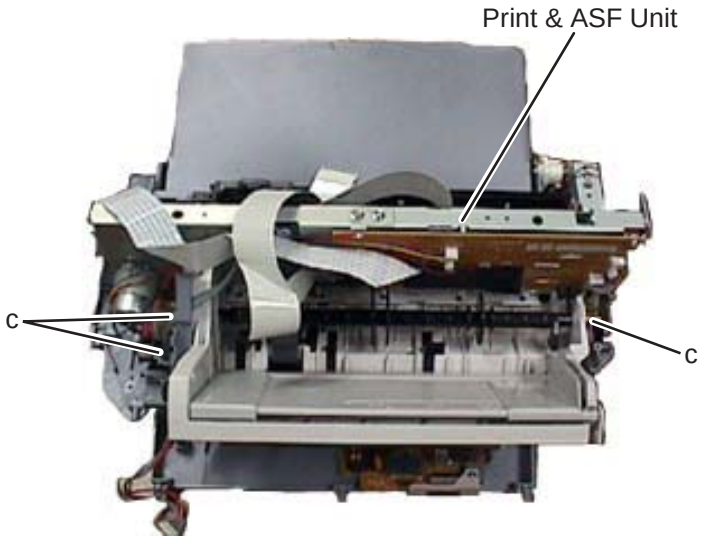
(7) Remove 3 screws (b) and then remove the SPCNT board together with the board frame.




F-3-23

(8) Remove Connector JTRY1 from the SENS board.

(9) Remove 3 screws (c) and then remove the printer and ASF unit from the main unit by lifting them.

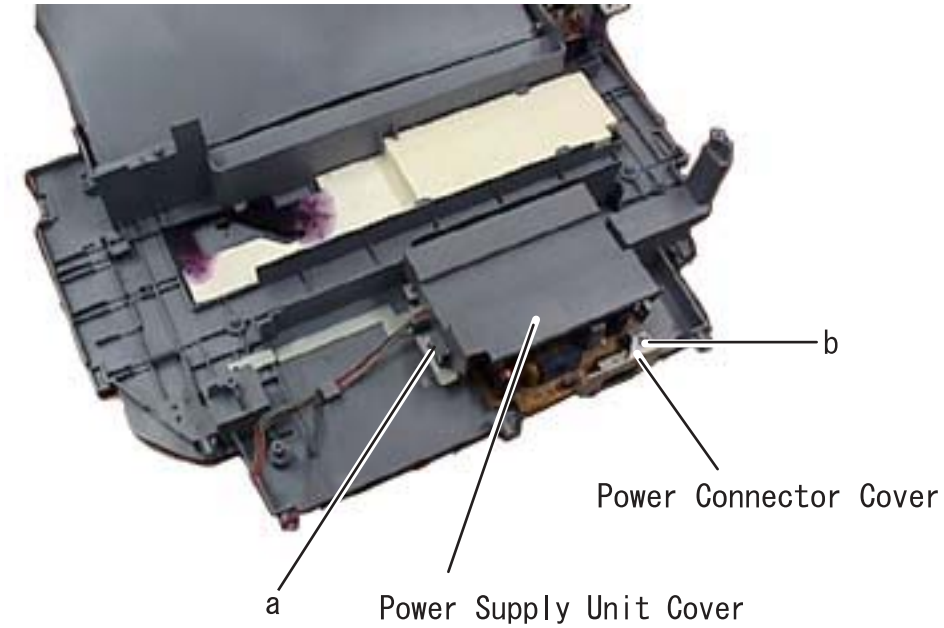



F-3-24

## 3.2.9 Power Supply Unit

0002-5288

(1) Perform the basic disassembly procedures.
(2) MP390: Remove NCU and the modular board.
(3) Remove the scanner unit.
(4) Remove Print & ASF unit.
(5) Remove the screw (a) and then remove the Power supply unit cover.
(6) Remove the screw (b) and then remove the Power connector cover.




F-3-25

(7) Remove the screw (c) and then remove the Power supply unit.

F-3-26

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Removing the Power supply unit (MP390 only)
Please make sure to attach the Power supply unit to the main unit only after connecting a grounding cable to the unit.

If a grounding cable is connected to the Power supply unit after the Power supply unit is attached to the main unit, it may damage the Power supply unit with electrical stress.

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# Chapter 4 Maintenance

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# 4.1 Maintenance

## 4.1.1 Consumables

0002-0433

T-4-1

| Level | Consumable | When |
|---|---|---|
| User | Ink tank (BCI-24Black / BCI-24Color) | When ink in the ink tank runs out. |
| Service Person | BJ cartridge | Uneven printing even after performing head cleaning several times with ink remained in the tank. |

## 4.1.2 Cleaning

0002-0565

Please refer to **How to Clean Parts** for cleaning procedures.

T-4-2

| Level | Location | When |
|---|---|---|
| Users | Exterior | When it gets dirty |
| | Document glass | When it gets dirty |
| | Platen | When the platen is stained with ink |
| | Roller | When papers are not fed/ejected properly |
| Service Person | None | |

## 4.1.3 Periodic Inspection

0002-0474

None

## 4.1.4 Periodic Replacement Parts

0002-0476

None

## 4.1.5 Adjustment Items

0002-5585

The following adjustments must be made on this fax.

T-4-3

| Item | Indication |
|---|---|
| Printhead Position Adjustment | When the vertical lines shift during Bi-directional printing. |

## 4.1.6 General Tools

0002-0583

T-4-4

| Tool | Use |
|---|---|
| Phillips screwdriver | Removing/inserting screws |
| Flat bladed screwdriver | Removing/inserting screws |
| Precision Phillips screwdriver | Removing/inserting screws |
| Precision flat bladed screwdriver | Removing plastic tabs |
| Tweezers | Removing coil spring |
| Isopropyl alcohol (IPA) | Cleaning the cleaning location |
| Pliers, needle nose | Driving retaining ring |

## 4.1.7 Special Tools

0002-0586

T-4-5

| Tool | Use | Part No. |
|---|---|---|
| Grease (FLOIL KG107) | Apply to specified parts | QY9-0057 |

| Tool | Use | Part No. |
|---|---|---|
| Grease (PG-641) | Apply to specified parts | CK-0562 |
| Grease (IF-20) | Apply to specified parts | CK-8006 |

# 4.2 How to Clean Parts

## 4.2.1 How to Clean Parts

0002-0504

**NOTE:**
If the parts above are very dirty, wipe with a cloth moistened with IPA (isopropyl alcohol).

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**Precautions when Using IPA**
When cleaning wit IPA, take care to prevent the IPA from splashing high-temperature parts. If IPA splashes high-temperature parts, leave for at least three minutes to allow the IPA to evaporate.

## 4.2.2 Exterior

0002-0507

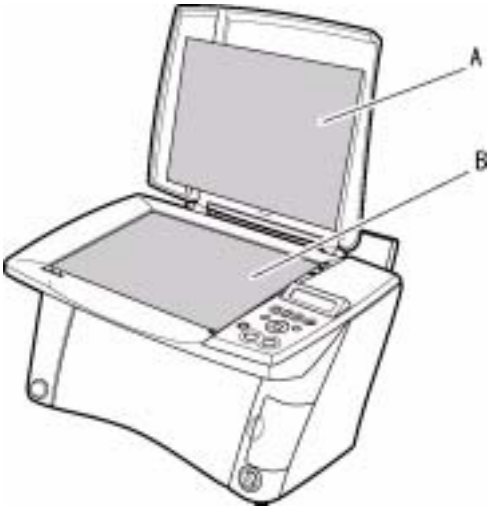
**Main Unit Outer Covers**
Wipe with a dry, soft cloth.

## 4.2.3 Scanning Unit

0002-0515

**Document Glass**
Open the pressure plate. Dampen a clean cloth and wring it thoroughly. Wipe the document glass with the cloth and dry the glass well. You may use a mild detergent diluted with water if the glass is very dirty.

**Document Cover**
Open the pressure plate, and wipe with a dry soft cloth.




F-4-1

A: Document Cover
B: Document Glass

## 4.2.4 Printer

0002-2366

**Cleaning the roller**

Remove all the media from the multi-purpose tray, and then press the [User Mode] key. Select [MAINTENANCE] by pressing cursor keys. Select [ROLLER CLEANING] by pressing cursor keys, and then press the [Set] key. Repeat this procedure twice after the roller cleaning is complete. Load A4 or LTR plain papers into the multi-purpose tray, and then perform the roller cleaning three times.

# 4.3 Service Switches

## 4.3.1 Hardware Switches

0002-0525

There is no service hardware switche on the Circuit board.

## 4.3.2 Service Data Setting

0002-0528

Service data can be checked and changed with items on display menus. The effective SSSWs/parameters and their default values in this fax machine are shown in **Service Data Setting**. Detailed description of each SSSW/parameter is not given in this manual except the new SSSWs/parameters added to this model. See **G3/G4 Facsimile Service Data Handbook (Rev.1)** (supplied separately) for details of them. The new switches for this model are described in **New SSSWs/Parameters Added to This Model**.

**#1SSSW (Service soft switch settings)**

These setting items are for basic fax service functions such as error management, echo countermeasures, and communications trouble countermeasures.

**#2 MENU (MENU switch settings)**

These setting items are for functions required during installation, such as NL equalized and transmission levels.

**#3 NUMERIC Param. (NUMERIC parameter settings)**

These setting items are for inputting numeric parameters such as the various conditions for the FAX/TEL switching function.

**#4 NCU (NCU settings)**

These setting items are for telephone network control functions such as the selection signal transmission conditions and the detection conditions, for the control signals sent from the exchange.

**#5 TYPE (TYPE setting)**

The type setting makes the service data conform to a specific country communications standards. There is only one setting item in this block.

**#6 GENESIS (UHQ function setting)**

These setting items are for scanned image processing such as edge enhancement and error diffusion processing.

**#7 PRINTER (PRINTER function settings)**

These setting items are for basic printer service functions such as the reception picture reduction conditions. Also there is an item for resetting the printer section without switching the power off-on.

**#8 CLEAR (Data initialization mode)**

Various data is initialized by selecting one of these setting items. There is a setting item for checking/inputting the total number of pages printed and total number of pages scanned by this fax.

**#9 ROM (ROM management)**

ROM data such as the version number and checksum are displayed.

## 4.3.3 Service Data Flowchart

0004-3250

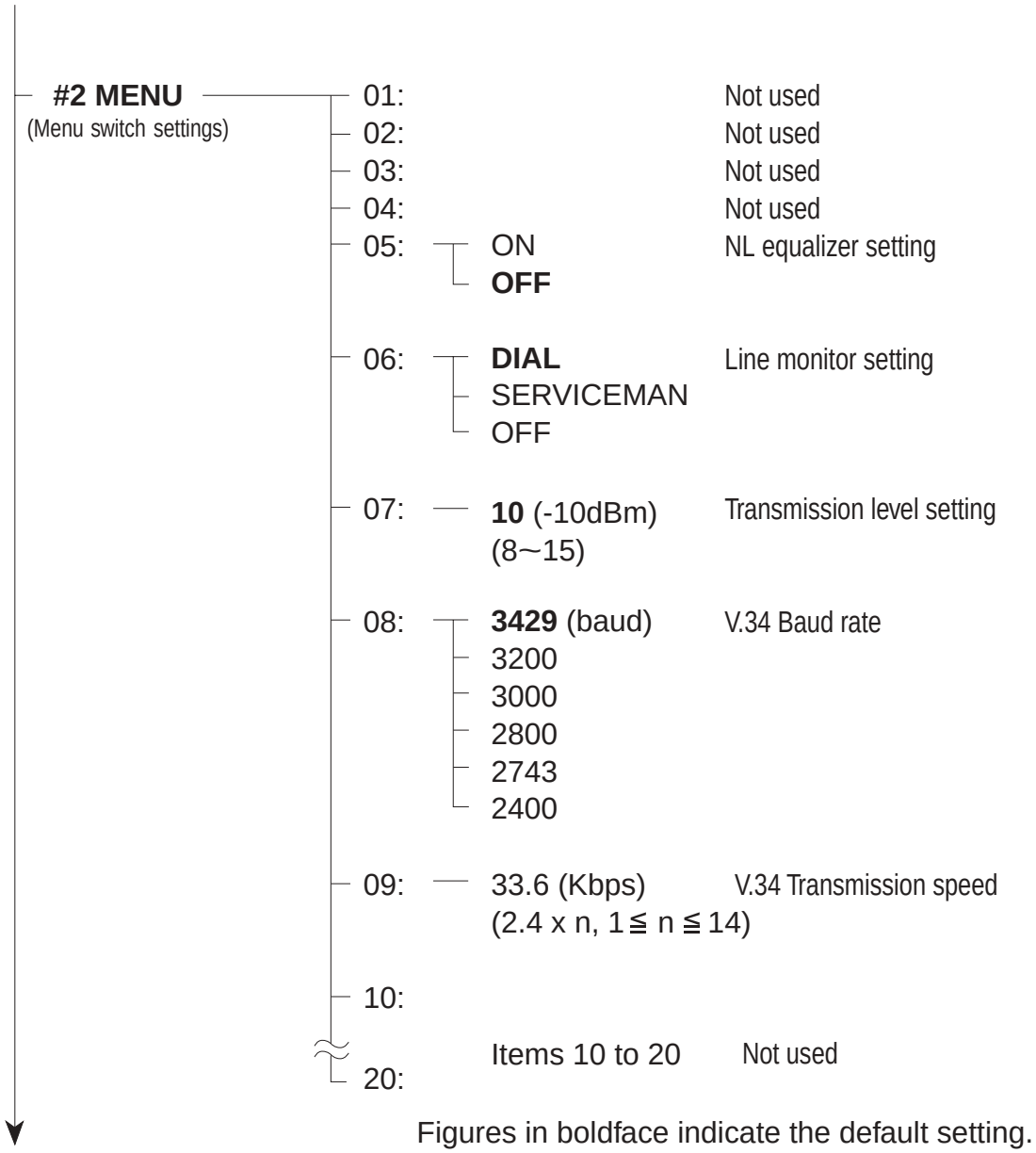
Service Data

◄ ►

| | Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | |
|---|---|---|---|---|---|---|---|---|---|---|
| #1 SSSW (Service soft switch setting) | SW01 | – | – | – | 0 | – | – | 0 | 0 | Error management |
| | SW02 | – | – | – | – | – | – | – | 0 | NETWORK connection condition memory clear list setting |
| | SW03 | 0 | 0 | 0 | 0 | – | – | 0 | – | Echo solution setting |
| | SW04 | 1 | 0 | – | 0 | 0 | 0 | – | – | Communication trouble solution settings |
| | SW05 | – | – | – | 0 | 0 | – | – | – | Standard function (DIS signal) setting |
| | SW06 | – | – | – | 1 | – | 0 | 0 | – | Scan condition settings |
| | SW07 | – | – | – | – | – | – | – | – | Not used |
| | SW08 | – | – | – | – | – | – | – | – | Not used |
| | SW09 | – | – | – | – | – | – | 0 | 0 | Communications result display function settings |
| SCAN ▲ ▼ Menu | SW10 | – | – | – | – | – | – | – | – | Not used |
| | SW11 | – | – | – | – | – | – | – | – | Not used |
| | SW12 | 0 | – | 0 | 0 | 0 | 0 | 1 | 0 | Page timer settings |
| | SW13 | – | – | – | – | – | – | – | – | Not used |
| | SW14 | – | – | – | – | – | – | – | – | Not used |
| | SW15 | – | 0 | – | – | – | – | – | – | Dial-in FAX/TEL switching functic |
| | SW16 | – | – | – | – | – | – | – | – | Not used |
| | SW17 | – | – | – | – | – | – | – | – | Not used |
| | SW18 | – | – | – | – | – | – | 0 | 0 | Communication trouble solutions |
| | SW19 | – | – | – | – | – | – | – | – | Not used |
| | SW20 | – | – | – | – | – | – | – | – | Not used |
| | SW21 | – | – | – | – | – | – | – | – | Not used |
| | SW22 | – | – | – | – | – | – | – | – | Not used |
| | SW23 | – | – | – | – | – | – | – | – | Not used |
| | SW24 | – | – | – | – | – | – | – | – | Not used |
| | SW25 | – | – | – | – | – | – | 0 | 0 | Report display function settings |
| | SW26 | 0 | 0 | – | – | 0 | – | – | 0 | Transmission function settings |
| | SW27 | – | – | – | – | – | – | – | – | Not used |
| | SW28 | – | – | 0 | 0 | 0 | 0 | 0 | 0 | V.8/V.34 protocol settings |
| | SW29 | – | – | – | – | – | – | – | – | Not used |
| | SW30 | – | – | – | – | – | – | – | – | Not used |
| | SW30 to SW50 | | | | | | | | | Not used |
| | SW50 | | | | | | | | | |

F-4-2

The switches marked "-" are not used. Do not change their settings.




F-4-3

No.01 to 04, 10 to 20 are not used. Do not change their settings.

**#3 NUMERIC Param.**
(Numeric parameter settings)

| | Default | Range | |
|---|---|---|---|
| 01: | 0 | | Not used |
| 02: | 10 (10%) | (1~ 99) | RTN signal transmission condition (1) |
| 03: | 15 (15 lines) | (2~ 99) | RTN signal transmission condition (2) |
| 04: | 12 (12 times) | (1~ 99) | RTN signal transmission condition (3) |
| 05: | 4 | | Not used |
| 06: | 4 | | Not used |
| 07: | 350 | | Not used |
| 08: | 0 | | Not used |
| 09: | 6 (6 digits) | (1~ 20) | The number of digits in telephone number compared against TSI signal to be matched for restricted receiving function |
| 10: | 5500 (55 seconds) | (0~ 9999) | Line connection detection time (T0 timer) |
| 11: | 3500 (35 seconds) | (0~9999) | T1 Timer (Rx) |
| 12: | 0 | | Not used |
| 13: | 1300 | | Not used |
| 14: | 0 | | Not used |
| 15: | 120 (1200 ms) | (0~ 999) | Hooking detection time |
| 16: | 4 (4 seconds) | (0~ 9) | Pseudo RBT transmission from CML on time until start |
| 17: | 100 (1000 ms) | (0~ 999) | Pseudo RBT signal pattern: On time |
| 18: | 0 (0 ms) | (0~ 999) | Pseudo RBT signal pattern: off time (short) |
| 19: | 200 (2000 ms) | (0~ 999) | Pseudo RBT signal pattern: off time (long) |
| 20: | 100 (1000 ms) | (0~ 999) | Pseudo ring pattern: On time setting |
| 21: | 0 (0ms) | (0~ 999) | Pseudo ring pattern: Off time (short) |
| 22: | 200 (2000 ms) | (0~ 999) | Pseudo ring pattern: Off time (long) |
| 23: | 44 | (Do not change) | FAX/TEL switching function signal detection le |
| 24: | 20 | (0~ 20) | Pseudo-RBT signal transmission level |
| 25: | 60 (600 ms) | (0~ 999) | Answering machine connection function signal detection time |
| 26: | 44 | (Do not change) | Answering machine connection no-sound dete |
| 27: | 0 | | Not used |
| 28: | 0 | | Not used |
| 29: | 0 | | Not used |
| 30: | 10 | | Not used |

F-4-4

⚠

No. 01, 05 to 08, 012 to 14, 27 to 30 are not used. Do not change their settings.

**#3 NUMERIC PARAM. (Numeric parameter settings)**

The relationship between the settings and the detection levels is as follows:

Parameter 24

0: Not used 1: Not used 2: Not used 3: Not used 4: Not used

5: -8 dBm 6: -9 dBm 7: -10 dBm 8: -11 dBm 9: -12 dBm

10: -13 dBm 11: -14 dBm 12: -15 dBm 13: -16 dBm 14: -17 dBm

15: -18 dBm 16: -19 dBm 17: -20 dBm 18: -21 dBm 19: -22 dBm

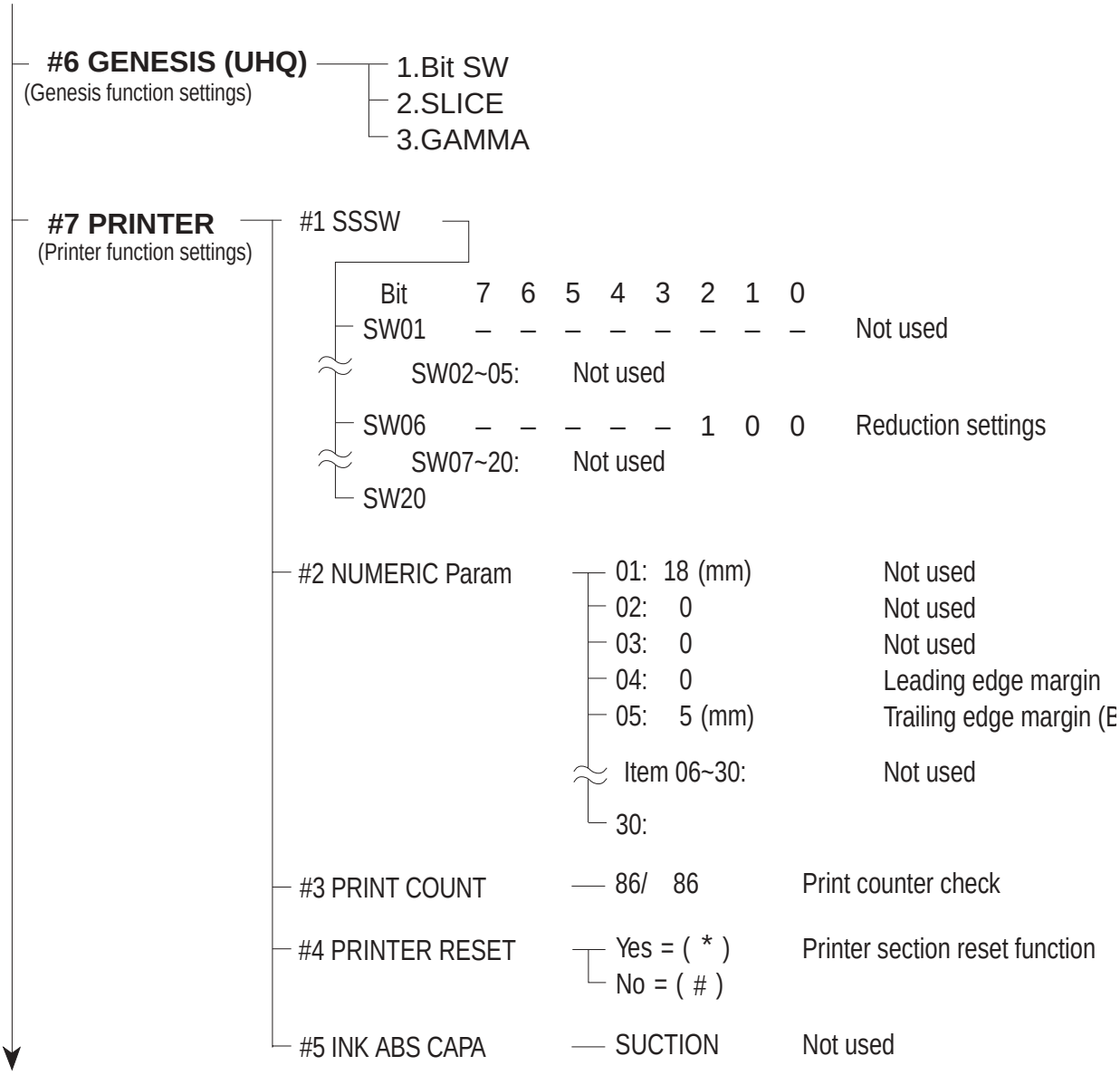
20: -23 dBm

- **#4 NCU** (NCU settings)
  - 1.TONE/PULSE
  - 2.DIAL TONE
  - 3.2nd DIAL TONE
  - 4.BUSY TONE 0
  - 5.BUSY TONE 1
  - 6.REORDER TONE
  - 7.MULTI
  - 8.AUTO RX
  - 9.CNG DETECT
  - 10.SPECIAL
  - 11.RKEY
  - 12.PBX DIAL TONE
  - 13.PBX BUSY TONE
- **#5 TYPE** (Type setting)
  - U.S.A.
  - EUROPE
  - U. K.
  - SWEDEN
  - SWISS
  - AUSTRIA
  - DENMARK
  - NORWAY
  - HOLLAND
  - BELGIUM
  - AUSTRALIA
  - FINLAND
  - N. Z.
  - ITALY
  - SPAIN
  - PORTUGAL
  - IRELAND
  - HONG KONG
  - MALAYSIA
  - HUNGARY
  - SAF
  - KOREA
  - CHINA
  - GERMAN
  - FRANCE
  - SINGAPORE
  - CZECH
  - SLOVENIA
  - CANADA
  - JAPAN

F-4-5

**#4 NCU (NCU settings)**

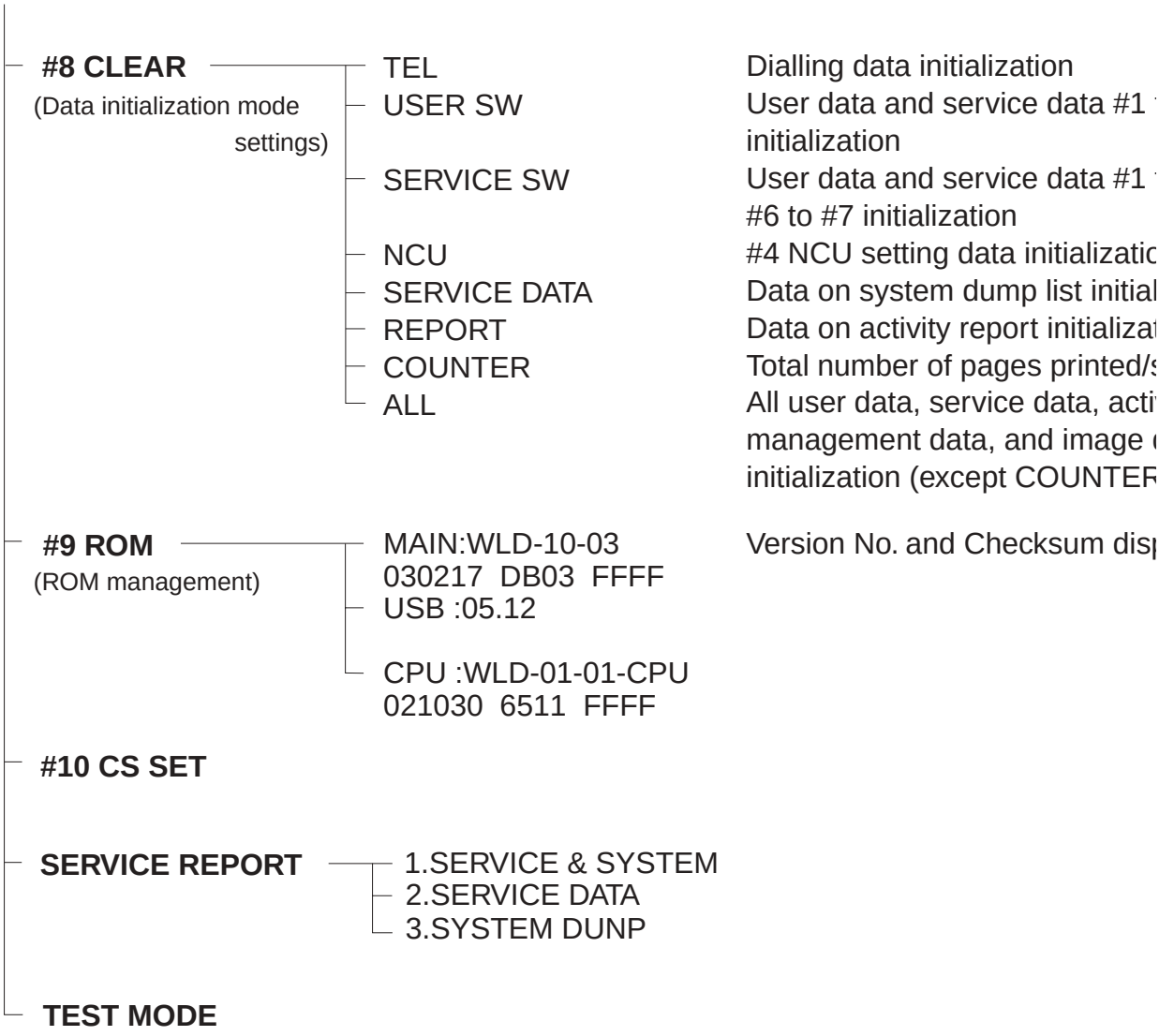
The values of these items are all set to match a specific nation's communications standards by the #5 TYPE setting. Do not change these setting.


#6 GENESIS (UHQ)
(Genesis function settings)
1.Bit SW
2.SLICE
3.GAMMA
#7 PRINTER
(Printer function settings)
#1 SSSW
Bit 7 6 5 4 3 2 1 0
SW01 – – – – – – – – Not used
SW02~05: Not used
SW06 – – – – – 1 0 0 Reduction settings
SW07~20: Not used
SW20
#2 NUMERIC Param
01: 18 (mm) Not used
02: 0 Not used
03: 0 Not used
04: 0 Leading edge margin
05: 5 (mm) Trailing edge margin (E
Item 06~30: Not used
30:
#3 PRINT COUNT
86/ 86 Print counter check
#4 PRINTER RESET
Yes = ( * )
No = ( # )
Printer section reset function
#5 INK ABS CAPA
SUCTION Not used

F-4-6

#6 GENESIS (UHQ function settings)

Tampering with this setting may cause the scanned image quality to deteriorate. Do not change these settings.




F-4-7

NOTE:

If USER SW is selected from #8 CLEAR, the memory management of the user data is not cleared. If TEL or SERVICE SW is selected, the memory management of the user data is cleared.

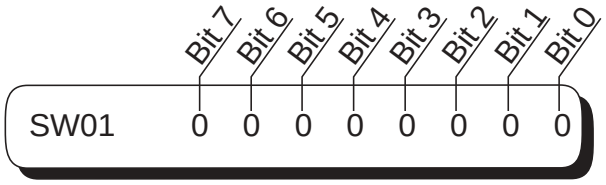
# 4.4 New SSSWs/Parameters Added to This Model

## 4.4.1 Service Data

0002-0681

**SSSW (Service Soft Switch settings)**

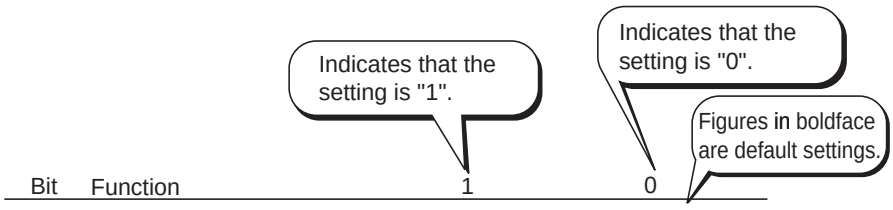
The items registered and set by each of these switches comprise 8-bit switches. The figure below shows which numbers are assigned to which bits. Each bits has a value of either 0 or 1.




F-4-8

Refer to the service data menu for the details of the service switches and the initial setup values of this machine. Because this machine does not have any new additional service data, for further details of service data, refer to the separate volume, **"G3/G4 Facsimile Service Data Service Handbook (revised ver.1)".**

Below are examples showing how to read bit switch tables.




| Bit | Function | 1 | 0 |
|---|---|---|---|
| 0 | Service error code | Output | **Not Output** |
| 1 | Error dump list | Output | **Not Output** |
| 2 | Not used | | |
| 3 | Copy function | No | **Yes** |
| 4 | ##300 series service error code | Output | **Not Output** |
| 5 | Not used | | |
| 6 | Not used | | |
| 7 | User setting restriction | Setting possible | **Setting resrticted** |

F-4-9

# 4.5 User Report Output Functions

## 4.5.1 User report output functions

0004-5270

The machine can output user reports manually by user operation, or automatically, according to user data settings.

a) Manual output of reports by user operation

T-4-6

| Report type | Operations |
|---|---|
| Activity report<br>Directory dial<br>User data list<br>Document memory list | Press the [Additional Function] key, and then select [Fax Settings]. Press ◀▶ key to selec [Reports/Lists]. Using the ◀▶ key, select the type of report to generate, and press the [Set] key. |

b) Reports output automatically by user data registration

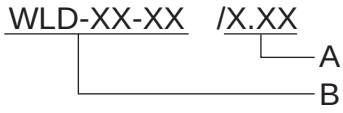
Each report written below can be automatically output by specifying "REPORT SETTINGS" in user data registration.

Transmission report
Reception report
Memory box report

REFERENCE:
For samples of user reports, see the User's Guide.

NOTE:
ROM Version display
The ROM version is printed on the top left hand side of the User's data list.
Please refer to this when troubleshooting.

example:




F-4-10

A: Printer ROM version
B: MAIN-ROM-version

c) Reports output automatically

Memory clear report

The machine automatically outputs a memory clear report when the power is turned on after a power cut.

12/14/2003 14:45 FAX 1234567890 CANON 001

**********
*** MEMORY CLEAR REPORT ***
**********

MEMORY FILES DELETED

| TX/RX NO | MODE | CONNECTION TEL/ID | PGS. | SET TIME |
|---|---|---|---|---|
| 0013 | TRANSMIT | 772129 | 2 | 12/14 14:14 |
| 5002 | MEMORY RX | | 2 | 12/14 14:43 |

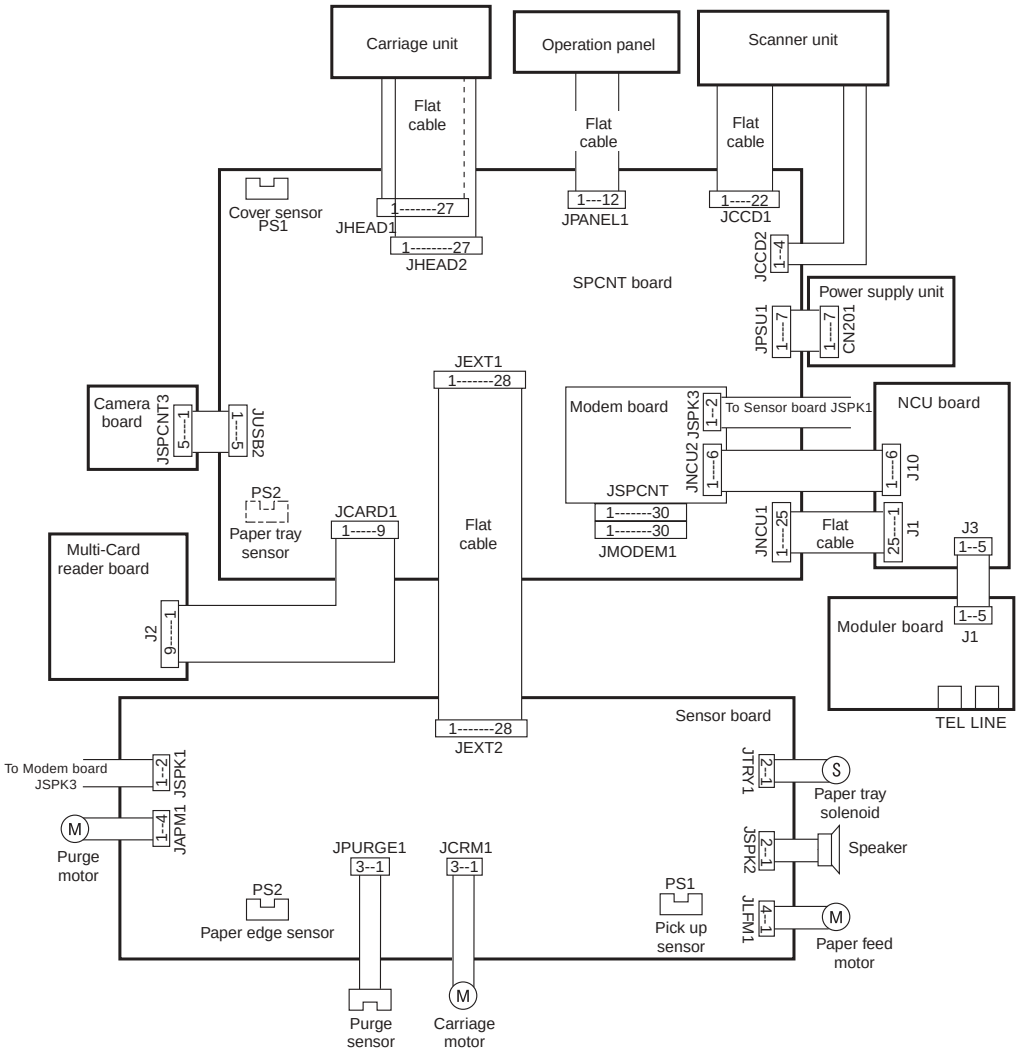
F-4-11

TX/RX NO : Indicates four digits of the transaction number
MODE : Indicates, TRANSMIT, MEMORY RX etc.
CONNECTION TEL/ID : Number sent from the other party or number dialled
PGS. : Number of pages are stored in memory
SET TIME : Time when data is stored in memory

# 4.6 Wiring Diagram

## 4.6.1 Wiring Diagram

0005-4763




F-4-12

# Chapter 5 Troubleshooting

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# 5.1 Troubleshooting Index

## 5.1.1 Troubleshooting Index

0002-1612

**For troubleshooting, use the troubleshooting index below to investigate the cause of the problem and refer to the specified page for countermeasures.**

**Problem**

**Errors shown on the display (Evaluation criteria: Look at the unit in question.)**

The error message can be checked.

The error code can be checked**.**

**General errors**

The unit does not power on.

The display looks abnormal.

The keys do not work.

**Printing problem**

The paper is not fed properly.

The paper feed motor does not run.

The paper is not picked up from the auto sheet feeder.

The printing operation is abnormal.

Nothing is printed.

The carriage motor does not run.

Carriage error

The carriage hits against left/right stop plate, causing a noize.

Printing quality error

The printer does not print at all.

Printing stop midway.

Certain colors do not print.

Blotches appear.

Blank ink appear.

**Scanning problem (Evaluation criteria: Test printing is good, but the copied image is no good.)**

The scanning image is abnormal.

Nothing prints.

The image has vertical stripes.

The half-tone image contains black dots.

The color or brightness of the scanned image is not normal.

**Memory card problem**

Memory card error

# 5.2 Errors Shown on the Display

## 5.2.1 User Error Message

0004-3247

Look for the applicable error message and execute the appropriate countermeasures.

"BLACK INK LOW"

Cause: The ink level in the black ink tank is low.
Solution: Replace the black ink tank. If the machine stops printing when copying or photo printing, you can continue printing by pressing the [Set] key. However, note that ink may run out. If print quality deteriorates or the printout is blank, replace the ink tank.

"BUSY/NO SIGNAL"

Cause: The receiving fax did not answer within 55 seconds. (T1 timer over)
Solution: Contact the other party and have them check their fax.You can try to send the document manually. For an overseas call, add pauses to the registered number.

Cause: The touch tone/rotary pulse setting on your fax is incorrect.
Solution: Set your fax to the setting that matches your telephone line.

Cause: The other party is not using a G3 machine.
Solution: Contact the other party and have them send or receive the document using a G3 machine.

Cause: The other party's fax is not working.
Solution: Contact the other party and have them check their fax.

Cause: The telephone number you dialed is busy.
Solution: Try sending the document at a later time.

"CANNOT USE THIS CARD"
TURN OFF AND ON

Cause: You have inserted a memory card incompatible with the machine or a damaged memory card into the card slot.
Solution: Remove the memory card from the slot, and then turn the power OFF and ON again.

"CARD READER BUSY"

Cause: You tried to start photo printing when the card slot was in use by the computer.

Solution: Wait until the card slot is no longer being used by the computer.

"CARD READER ERROR"

Cause: Thre is a problem with the card slot.
Solution: (1) Switch to another mode or turn the machine OFF and ON.
(2) Check the connection between the multi-card board and the SPCNT board.
(3) Replace the multi-card board.
(4) Replace the SPCNT board.

"CARD READER OFFLINE"

Cause: The card slot may not be receiving any power.
Solution: (1) Remove the memory card from the card slot, turn the power OFF and ON again, then reinsert the memory card.
(2) Check the connection between the multi-card board and the SPCNT board.
(3) Replace the multi-card board.
(4) Replace the SPCNT board.

"CARTRIDGE JAMMED"

Printing position correction failed.
Cause: Carriage movement prevented by one of the followings:
Damaged shaft
Parts deformed. (Carriage or guide frame)
Insufficient grease
Solution: Replace the shaft.
Replace the deformed parts.
Apply more grease.

Cause: Bi-directional print displacement correction failed because the carriage motor is out of step, or some similar reason.
Solution: Replace the carriage motor.
Home position error

Cause: Tried to stop the carriage unit that has been moving or to move the carriage unit at a pouse by force.
Solution: Do not touch the carriage unit other than cartrige replacement position.

Cause: Foreign body in carriage section.
Solution: Open flatbed ass'y and remove the foreign body.

Cause: Loose carriage belt.
Solution: Replace the carriage belt.

Cause: Carriage motor does not work.
Solution: (1) Switch power OFF/ON.
(2) Replace the carriage motor.

Cause: The position of the carriage cannot be detected (due to smears on the carriage encoder film or the SPCNT board failure).
Solution: (1) Switch power OFF/ON.
(2) Wipe the cariage encoder film with a cloth soaked with alcohol.
(3) Replace the carriage unit.
(4) Replace the carriage encoder film.
(5) Replace the SPCNT board.

---

Note:
This error message means the same as service error codes ##338 and ##340. When this error occurs in this model. it is not treated as a service error, but as a user error, and the error message is displayed.

---

"CHECK PAPER SIZE"

---

Cause: The size of the paper loaded in the paper cassette is different from the paper size set by user data.
Solution: Load an appropriate papaer in the paper cassette. Or change the paper size settings, and then press the [Set] key.

"CHECK PRINTER" (##334 - ##336, ##343, ##345, ##346,##352)

---

Cause: The printer's internal unit has malfunctioned.
Solution: (1) Remove the jammed paper. (Check the paper edge sensor is OFF.)
(2) Press the [Set] key.
(3) Reinstall the printhead.
(4) Turn the power off and on.
(5) Check the service error code and refer to an appropriate solution.

"CLEAR PAPER JAM"

---

Cause: There is a paper jam.
Solution: Clear the paper jam and reload paper in the multi-purpose tray. Press the [Set] key or the [Start] key.

"COLOR INK LOW"

---

Cause: The ink level in the color ink tank is low.
Solution: Make sure you have a new color ink tank ready to replace the used one when ink runs out. If the machine

stops printing when copying or photo printing, you can continue printing by pressing the [Set] key. However, note that ink may run out. If print quality deteriorates or the printout is blank, replace the ink tank.

"COVER OPEN"

Cause: You opened the flatbed ass'y during an operation.
Solution: Close the flatbed ass'y.
Cause: Faulty cover sensor
Solution: Replace the cover sensor (a unit of replacement is the SPCNT board: HK1-0754,MP390:HK1-0755)

"INK TANK CHANGED?"

Cause: You returned the scan unit to its original position.
Solution: If you replaced an ink tank, press [YES]. If you did not, press [NO].

"LOAD PAPER"

Cause: The multi-purpose tray is empty.
Solution: Load paper in the multi-purpose tray. Make sure the stack is below the paper limit mark. Press the [Set] key, the [Color Start] key or [B&W Start] key.

"NO ANSWER"

Cause: The recipient's fax machine does not answer.
Solution: Check the number. Try dialing again after waiting for a moment.

"PROBLEM READING CARD"
REINSERT MEMORY CARD

Cause: The data on the memory card may be inaccessible.
Solution: Check the data on the memory card in you digital camera.

"PROBLEM READING CARD"
TURN OFF AND ON

Cause: There is a problme with the card slot.
Solution: (1) Switch to another mode or turn the machine OFF and ON.
(2) Check the connection between the multi-card board and the SPCNT board.
(3) Replace the multi-card board.
(4) Replace the SPCNT board.

"PUT IN CARTRIDGE"

Cause: The printhead is not set.
Solution: Set the printhead.

"WASTED INK NEAR FULL"

Cause: The waste ink tank (which holds the ink used for print head cleaning) is nearly full.
Solution: If "CHECK PRINTER" message is displayed, refer to Cause and Solution of the error code ##343 and replace the waste ink tank.

"WRONG CARTRIDGE"

Cause: The printhead (BJ cartridge) is not installed correctly.
Solution: Install the prithead (BJ cartridge).

Cause: The printhead (BJ cartridge) is defective.
Solution: Replace the printhead (BJ cartridge).

"MEMORY FULL"

Cause: The fax's memory is full because it has received too many documents.
Solutions: (1) Print out any documents which are stored in memory. Then start the operation again.
(2) If the memory contains any facsimiles you don't need, delete them.
(3) You cannot receive a fax was scanned with fine graphic images.

Cause: The fax's memory is full because you tried to send too many pages at once.
Solution: Divide the document and send each part separately.

Cause: The macine's memory is full because you tried to copy too many pages at once or a very detailed document.
Solution: Divide the document and copy each part separately.

Cause: Tried to print a large image data in the photo print mode.
Solution: Print the image data from the computer.

"WAIT COOLING"

Cause: During printing, the printhead may have become too hot.
Solution: Allow the machine to cool down. The machine will resume printing when it has cooled down.

# 5.3 Error Code

## 5.3.1 ERROR CODE LIST

0002-0964

The error codes that have newly been added starting with the product are identified by the notation "new" those error codes for which remedies unique to the product are offered are identified by the notation "UNQ (UNIQUE)."
User error code

T-5-1

| No. | Tx or Rx | Definition |
|---|---|---|
| #001 | [TX ] | Document has jammed |
| #003 | [TX/RX] | Document is too long, or page time-over |
| #005 | [TX/RX] | Initial identification (T0/T1) time-over |
| #009 | [RX ] | Recording paper has jammed or the recording paper has run out |
| #011 | [RX ] | Polling reception error |
| #012 | [TX ] | The other party has run out of recording paper |
| #018 | [TX/RX] | Auto dialing transmission error |
| #021 | [RX ] | The other party has rejected the machine during polling reception |
| #022 | [TX ] | Call fails |
| #037 | [RX ] | Memory has overflowed when receiving images |
| #052 | [RX ] | Image memory full by no ink error |
| #085 | [TX ] | Other party does not support ITU-T Color Faxing |
| #995 | [TX/RX] | Memory Communication reservation cancellation |

Service error code

T-5-2

| No. | Tx or Rx | Definition |
|---|---|---|
| ##100 | [TX] | The number allowed for retransmission of the procedure signal was exceeded during transmission |
| ##101 | [TX/RX] | The modem speed of the machine does not match that of the other party |
| ##102 | [TX] | Fallback is not possible |

| No. | Tx or Rx | Definition |
|---|---|---|
| ##103 | [RX] | EOL cannot be detected for 5 sec (15 sec if CBT) |
| ##104 | [TX] | RTN or PIN has been received |
| ##106 | [RX] | The procedure singal cannot be received for 6 sec while in wait |
| ##107 | [RX] | The transmitting machine cannot be use fallback |
| ##109 | [TX] | After transmitting DCS, a signal other than DIS, DTC, FTT, CFR, and CRP was received, exceeding the permitted number of transmissions of the procedure signal |
| ##111 | [TX/RX] | Memory error |
| ##114 | [RX] | RTN was transmitted |
| ##200 | [RX] | During image reception, a carrier is not detected for 5 sec |
| ##201 | [TX/RX] | DCN was received through a non-normal procedure |
| ##204 | [TX] | Receive DTC without Tx data |
| ##220 | [TX/RX] | System error (e.g., main program may have gone away) |
| ##224 | [TX/RX] | Fault occurred in the communication procedure signal |
| ##226 | [TX/RX] | Stack Pointer Not within RAM Range |
| ##229 | [RX] | The recording system became locked for 1 min |
| ##232 | [TX] | The unit used to control the encoder is faulty |
| ##237 | [RX] | The IC used to control the decoder malfunctioned |
| ##238 | [RX] | The unit used to control recording malfunctioned |
| ##261 | [TX/RX] | System error occurred between the modem and system control board |
| ##280 | [TX] | The number of re-transmissions of the procedure signal has been exceeded |
| ##281 | [TX] | The number of re-transmissions of the procedure signal has been exceeded |
| ##282 | [TX] | The number of re-transmissions of the procedure signal has been exceeded |
| ##283 | [TX] | The number of re-transmissions of the procedure signal has been exceeded |
| ##284 | [TX] | DCN has been received after transmission of TCF |
| ##285 | [TX] | DCN has been received after transmitting EOP |
| ##286 | [TX] | DCN has been received after transmitting EOM |

| | No. | Tx or Rx | Definition |
|---|---|---|---|
| | ##287 | [TX] | DCN has been received after transmitting MPS |
| | ##288 | [TX] | After transmitting EOP, a signal other than PIN, PIP, MCF, RTP, or RTN was received |
| | ##289 | [TX] | After transmitting EOM, a signal other than PIN,PIP,MCF, RTP, or RTN was received |
| | ##290 | [TX] | After transmitting MPS, a signal other than PIN,PIP,MCF, RTP, or RTN was received |
| | ##332 | [TX/RX] | Printer control DRAM check error |
| | ##333 | [TX/RX] | Printer control ROM check error |
| | ##334 | [TX/RX] | Printer control EEPROM check error |
| | ##335 | [TX/RX] | Data transmission error between the system control section and printer control section |
| | ##336 | [TX/RX] | BJ head abnormal temperature error |
| | ##337 | [RX] | BJ head temperature sensor error |
| | ##338 | [RX] | Printing Position Correction Failed |
| | ##339 | [RX] | BJ Head Voltage Malfunction Error |
| | ##340 | [RX] | Home Position Error |
| UNQ | ##341 | [TX/RX] | Maintenance Jet Waste Ink Tank Full |
| UNQ | ##342 | [TX/RX] | Cleaning absorption waste ink capacity full |
| UNQ | ##343 | [TX/RX] | Ink Detection Waste Ink Tank Full |
| | ##346 | [TX/RX] | Inside temperature error |
| NEW | ##352 | [RX] | Printer control EEPROM head information error |
| | ##670 | [TX] | In V.8 late start, the V.8 ability was detected in DIS from the other party and, in response, CI was transmitted; however, the procedure failed to advance, causing a T1 time-over condition |
| | ##671 | [RX] | In V.8 call arrives, the procedure fails to advance to phase 2 after CM detection, causing a T1 time-over condition |
| | ##672 | [TX] | In V.34 transmission, the procedure fails to move from phase 2 to phase 3 and later, causing a T1 time-over condition |

| No. | Tx or Rx | Definition |
|---|---|---|
| ##673 | [RX] | In V.34 reception, the procedure fails to move from phase 2 to phase 3 and later, causing a T1 time-over condition |
| ##674 | [TX] | In V.34 transmission, the procedure fails to move from phase 3 or phase 4 to a control channel or later, causing a T1 time-over condition |
| ##675 | [RX] | In V.34 reception, the procedure fails to move from phase 3 or phase 4 to a control channel or later, causing a T1 time-over condition |
| ##750 | [TX] | In ECM transmission, no significant signal can be received after transmission of PPS-NULL, and the allowed number of procedure signal re-transmissions was exceeded |
| ##752 | [TX] | In ECM transmission, DCN was received after transmission of PPS-NULL |
| ##753 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-NULL |
| ##754 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-NULL |
| ##755 | [TX] | In ECM transmission, no significant signal can be received after transmission of PPS-MPS, and the allowed number of procedure signal re-transmissions was exceeded |
| ##757 | [TX] | In ECM transmission, DCN was received after transmission of PPS-MPS |
| ##758 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-MPS |
| ##759 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-MPS |
| ##760 | [TX] | In ECM transmission, no significant signal can be received after transmission of PPS-EOM, and the allowed number of procedure signal re-transmissions was exceeded |
| ##762 | [TX] | In ECM transmission, DCN was received after transmission of PPS-EOM |
| ##763 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-EOM |
| ##764 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-EOM |

| No. | Tx or Rx | Definition |
|---|---|---|
| ##765 | [TX] | In ECM transmission, no significant signal can be received after transmission of PPS-EOP, and the allowed number of procedure signal re-transmissions was exceeded |
| ##767 | [TX] | In ECM transmission, DCN was received after transmission of PPS-EOP |
| ##768 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-EOP |
| ##769 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-EOP |
| ##770 | [TX] | In ECM transmission, no significant signal can be received after transmission of EOR-NULL, and the allowed number of procedure signal re-transmissions was exceeded |
| ##772 | [TX] | In ECM transmission, DCN was received after transmission of EOR-NULL |
| ##773 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-NULL |
| ##774 | [TX] | In ECM transmission, ERR was received after transmission of EOR-NULL |
| ##775 | [TX] | In ECM transmission, no significant signal can be received after transmission of EOR-MPS, and the allowed number of procedure signal re-transmissions was exceeded |
| ##777 | [TX] | In ECM transmission, DCN was received after transmission of EOR-MPS |
| ##778 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-MPS |
| ##779 | [TX] | In ECM transmission, ERR was received after transmission of EOR-MPS |
| ##780 | [TX] | In ECM transmission, no significant signal can be received after transmission of EOR-EOM, and the allowed number of procedure signal re-transmissions was exceeded |
| ##782 | [TX] | In ECM transmission, DCN was received after transmission of EOR-EOM |
| ##783 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-EOM |

| No. | Tx or Rx | Definition |
|---|---|---|
| ##784 | [TX] | In ECM transmission, ERR was received after transmission of EOR-EOM |
| ##785 | [TX] | In ECM transmission, no significant signal can be received after transmission of EOR-EOP, and the allowed number of procedure signal re-transmissions was exceeded |
| ##787 | [TX] | In ECM transmission, DCN was received after transmission of EOR-EOP |
| ##788 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-EOP |
| ##789 | [TX] | In ECM transmission, ERR was received after transmission of EOR-EOP |
| ##790 | [RX] | In ECM reception, ERR was transmitted after reception of EOR-Q |
| ##791 | [TX/RX] | During an ECM mode procedure, a signal other than a significant signal was received |
| ##792 | [RX] | In ECM reception, PPS-NULL between partial pages cannot be detected |
| ##793 | [RX] | In ECM reception, no effective frame was detected while signals were received at high speed, and a time-over condition occurred |

## 5.3.2 New Error Codes and Recovery methods

0002-1662

Those error codes that have been added starting with the products and those error codes for which remedies unique to the product are offered are shown together with causes and remedies, where applicable.

##341 Maintenance jet waste ink capacity full

Solution: Replace thewaste ink absorber as follows in the error occurs:
(1) Select 3. EEPROM CLEAR under [8] PRINTER TEST in TEST mode, and the select 0.
(2) Check to make sure that no image exist in memory; then, turn off the power, remove the appropriate parts, and replace the waste ink absorber.

##342 Cleaning absorption waste ink capacity full

Solution: Replace thewaste ink absorber as follows in the error occurs:
(1) Select 3. EEPROM CLEAR under [8] PRINTER TEST in TEST mode, and the select 0.
(2) Check to make sure that no image exist in memory; then, turn off the power, remove the appropriate parts, and replace the waste ink absorber.

##352 Printer control EEPROM head information error

Cause: The EEPROM for printer control is faulty.

Solution:

(1) Turn off and then on the power.

(2) Turn off the power, and replace the printhead.

(3) Replace the SPCNT board.

NOTE:

In the presence of ##352, the carriage unit will not move to printhead replacement position even when the inner cover is opened. Moreover the carriage will not be locked in position even when the power is turned off. When replacingthe printhead, be sure to turn off the power, and draw out the carriage before replacement.

# 5.4 Errors not Shown on the Display

## 5.4.1 General Errors

0002-1688

**The unit does not power on.**

(1) Check the power cord connection.

(2) Check the connection between the PCNT board (JPSU1) and power supply unit.

(3) Check the power supply unit's fuse (F1)

(4) Replace the power supply unit.

**The display looks abnormal.**

**Nothing is displayed.**

(1) Check the connection between the Operation panel unit and SPCNT board (JPANEL1).

(2) Replace the Operation panel unit.

(3) Replace the SPCNT board.

**Part of the LCD panel does not display anything.**

(1) Check the connection between the Operation panel unit and SPCNT board (JPANEL1).

(2) Replace the Operation panel unit.

(3) Replace the SPCNT board.

**The keys do not work**

(1) If the test mode can be used, check for faulty keys.

(2) Check the connection between the Operation panel unit and SPCNT board (JPANEL1).

(3) Replace the Operation panel unit.

(4) Replace the SPCNT board.

## 5.4.2 Printing problem

0002-1703

**The paper is not fed properly.**

**The paper feed motor does not run.**

(1) Check the connection from the paper feed motor to the sensor board (JLFM1).

(2) Check the connection from the sensor board (JEXT2) to the SPCNT board (JEXT1).

(3) Replace the paper feed motor.

(4) Replace the sensor board.

(5) Replace the SPCNT board.

**The paper is not picked up from the auto sheet feeder.**

(1) Check the ASF motor for foreign objects or damages.

(2) Replace the ASF unit.

(3) Replace the SENSOR board (Faulty PRS or PES).

**The printing operation is abnormal.**

**Nothing prints.**

(1) Remove the BJ cartridge and re-install it.
(2) Execute cleaning five times, and try printing again.
(3) Replace the BJ cartridge.
(4) Replace the ink tank.
(5) Replace the purge unit.
(6) Check the connection between carriage ribbon cable and SPCNT board (JHEAD1, JHEAD0).
(6) Replace the carriage unit.
(7) Replace the SPCNT board.

**The carriage motor does not run.**

(1) Check the connection from the carriage motor to the sensor board (JCRM1).
(2) Check the connection from the sensor board (JEXT2) to the SPCNT board (JEXT1).
(3) Replace the carriage motor.
(4) Replace the sensor board.
(5) Replace the SPCNT board.

**Carriage error**

**The carriage comes into contact with the push-on plates at the left and right side, resulting in noise.**

(1) Check if grease adheres to the carriage encoder film.
(2) Using lint-free paper impregnated with alcohol, wipe the carriage encoder film with care so as not to scratch the film.
(3) If a lot of grease adheres to the carriage, replace the carriage board because grease might be spread to the sensor on the carriage board. (In this case, you must replace the carriage unit (HK1-0717) which contains the carriage board.)
(4) Replace the carriage encoder film.

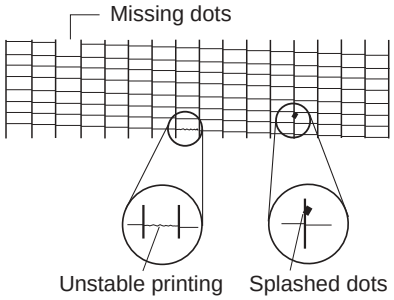
**Printing quality error**

**The printer does not at all.**

**Printing stops midway.**

**Certain colors are not printed.**

(1) Check that the orange cap or tap is not on the printhead.
(2) Remove the printhead and re-install it.
(3) Perform printhead cleaning, and visually check the test print for non-discharge of ink from nozzle.
(4) Perform head-refreshing, and visually check the test print for non-discharge of ink from nozzle.
(5) Replace the appropriate ink tank.
(6) Replace the printhead
(7) Replace the purge unit.




F-5-1

**Blotched appear**

**Blank ink appear**

(1) Remove and reinstall the printhead.

(2) Perform printhead cleaning, and visually check the test print for non-discharge of ink from nozzle.

(3) Perform head-refreshing, and visually check the test print for non-discharge of ink from nozzle.

(4) Replace the appropriate ink tank.

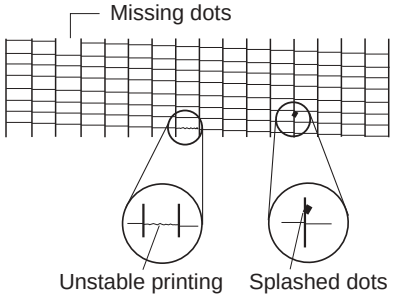
(5) Replace the printhead.

(6) Check the connection of the carriage ribbon cable and the SPCNT board (JHEAD1, JHEAD2).

(7) Replace the carriage unit.

(8) Replace the SPCNT board.

(9) Replace the purge unit.




F-5-2

## 5.4.3 Scanning Problems

0002-1775

**Scanning problems**

CCD Motor does not work.

(1) Check the connection between the CCD motor and SPCNT board (JCCD2).

(2) Replace the scanner unit.

(3) Replace the SPCNT board.

**The scanning image is abnormal. (Evaluation criteria: Check the copy image's faults).**

**Nothing is printed.**

(1) Check the connection between the CCD and SPCNT board (JCCD1).
(2) Replace the scanner unit.
(3) Replace the SPCNT board.

**The image has vertical stripes.**
(1) Clean the Document glass.
(2) Check the connection between the CCD and SPCNT board (JCCD1).
(3) Replace the scanner unit.
(4) Replace the SPCNT board.

**The halftone image contains black dots.**
(1) Clean the Document glass.
(2) Check the connection between the CCD and SPCNT board (JCCD1).
(3) Replace the scanner unit.
(4) Replace the SPCNT board.

**The color or brightness of the image is not normal.**
(1) Clean the Document glass.
(2) Check the connection between the CCD and SPCNT board (JCCD1).
(3) Replace the scanner unit.
(4) Replace the SPCNT board.

## 5.4.4 Memory Card Problem

0002-1794

**Memory card error (MP370, MP390 only)**

**The card is not recognized.**
(1) Detach the memory card, and fit it back once again.
(2) Check to see if the memory card contains image data using a digital camera or computer.
(3) Check the connection between the multi card reader board and the SPCNT board (JCARD1).
(4) Replace the multi card reader unit.
(5) Replace the SPCNT board.

# 5.5 Test Mode Function Problems

## 5.5.1 Faulty Operation Panel Test

0002-5806

**The LED panel does not display correctly.**

(1) Check the connection between the OPECNT board (J1) and the SPCNT board (JPANEL1).

(2) Replace the operation panel unit.

(3) Replace the SPCNT board.

**The LED lamp fails to go ON.**

(1) Check the connection between the OPCNT board (J1) and the SPCNT board (JPANEL1).

(2) Replace the operation panel unit.

(3) Replace the SPCNT board.

**The key on the operation panel fails to work properly.**

(1) Check the connection between the OPCNT board (J1) and the SPCNT board (JPANEL1).

(2) Replace the operation panel unit.

(3) Replace the SPCNT board.

## 5.5.2 Faulty DRAM Test

0002-5811

**The intention "READ & COMPARE NG" appears.**

(1) Perform the DRAM test again. In case "Read & COMPARE NG" still appears, replace the SPCNT board.

## 5.5.3 Faulty Sensor Test

0002-5812

**Paper edge sensor fails to operate properly.**

(1) Check whether the actuator of paper edge sensor is in correct position.

(2) Check the connection between the SCPNT board (JEXT1) and the SENSOR board (JEXT2).

(3) Replace the SENSOR board.

(4) Replace the SPCNT board.

**Cover sensor fails to operate properly.**

(1) Check whether the actuator of cover sensor is in correct position.

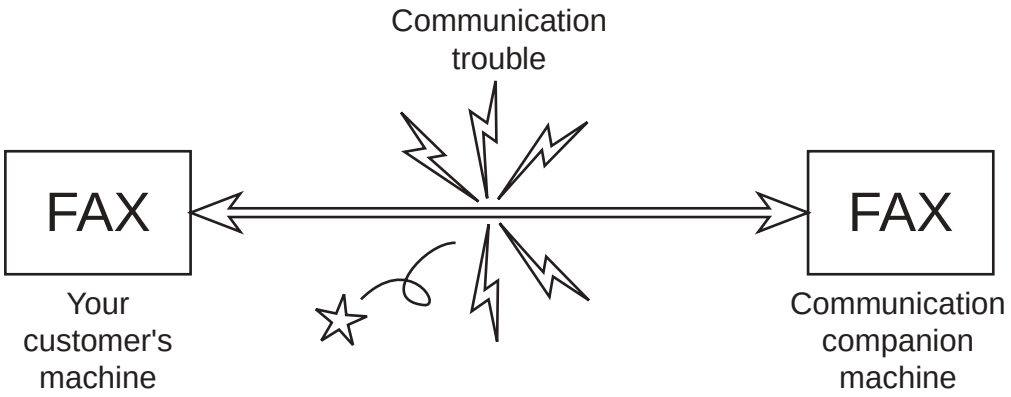
(2) Replace the SPCNT board.

# 5.6 Processing Communication Problems

## 5.6.1 Initial identification of problems

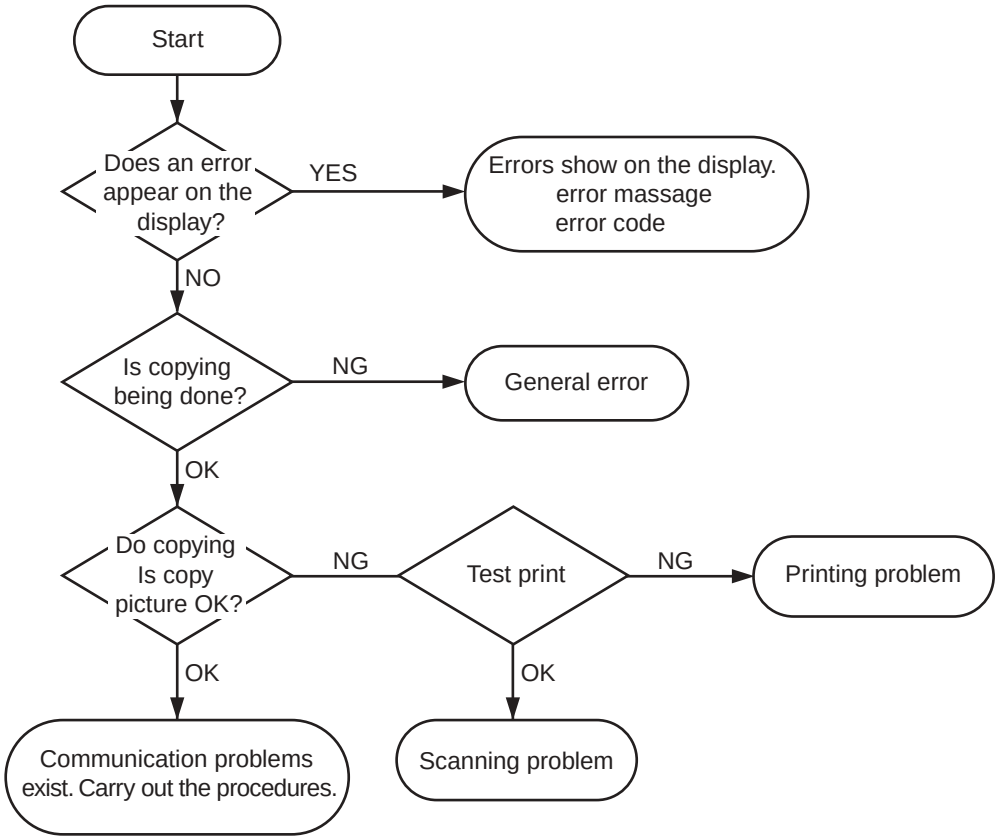
0004-2797

Since the facsimile must transmit picture information, a transmitter, a receiver and telephone lines are required for this purpose. Transmissions may cause problems if one or more of the there is poor.




F-5-3

To process communication problems, first of all, it is necessary to narrow down the cause of the problem. Thus, the procedures appearing below must be checked accordingly.




F-5-4

## 5.6.2 Procedures for processing communication problems

0004-2875

If the problem proves to be communication trouble, deal with it according to the following procedures.

(1) Study the conditions at the time of trouble as closely as possible. Record or keep the items listed below.

a) Operations at the time of trouble.

Document number, transmission mode, error occurrence timing call set-up method(auto dialing etc.)

b) Sample of defective picture (When receiving)

c) LCD display at the time of trouble.

d) Communication management report at the time of trouble.

e) User's name, telephone number (to contact), Fax number, model name.

f) User's name, of the other party, telephone number (to contact), Fax number, model name, name of servicemen in charge.

g) Frequency of trouble and error code (##100 etc.).

h) Condition of the other party's facsimile:

Transmitted/received page number? Automatic or manual?

Error occurred? The receive condition? etc.

---

NOTE:

When visiting a user with a trouble report, a) can be known by outputting the error protocol data (or error dump), and g) can be known by outputting the total transaction report (or the system error data list).

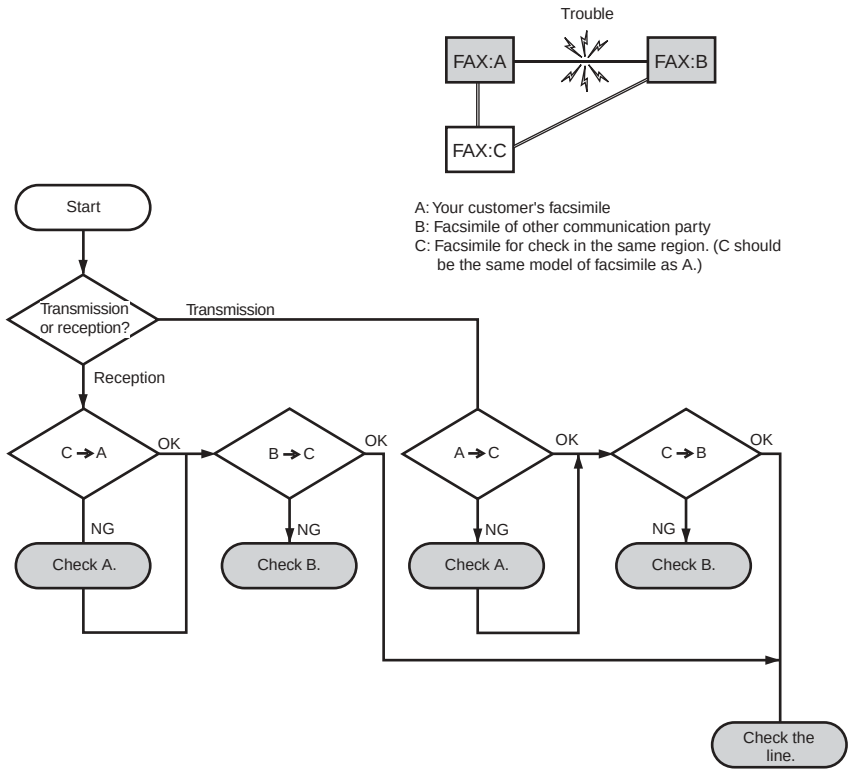
(2) Test communication according to flowchart procedures appearing on the next page.

* Carry out the tests with the actual lines on each item, verify the symptoms and record it.
* In the case of trouble with another manufacturer's facsimile, refer to the flowchart for troubles with other manufacture's.

(3) Finally, process over by judging systematically all the data.

NOTE:
If the other party's facsimile is that of another manufacturer and there is nothing wrong with your customer's machine, it is recommended that you ask your customer to contact the facsimile user of the other party, so that the other party's facsimile is checked by the dealer. "Call the service station" in the flowchart means that problems may occur with regard to the communication compatibility of facsimile, consult the matter with the staff in charge at the service station. To quicken the resolving of the problem, report the information listed in (1) above.

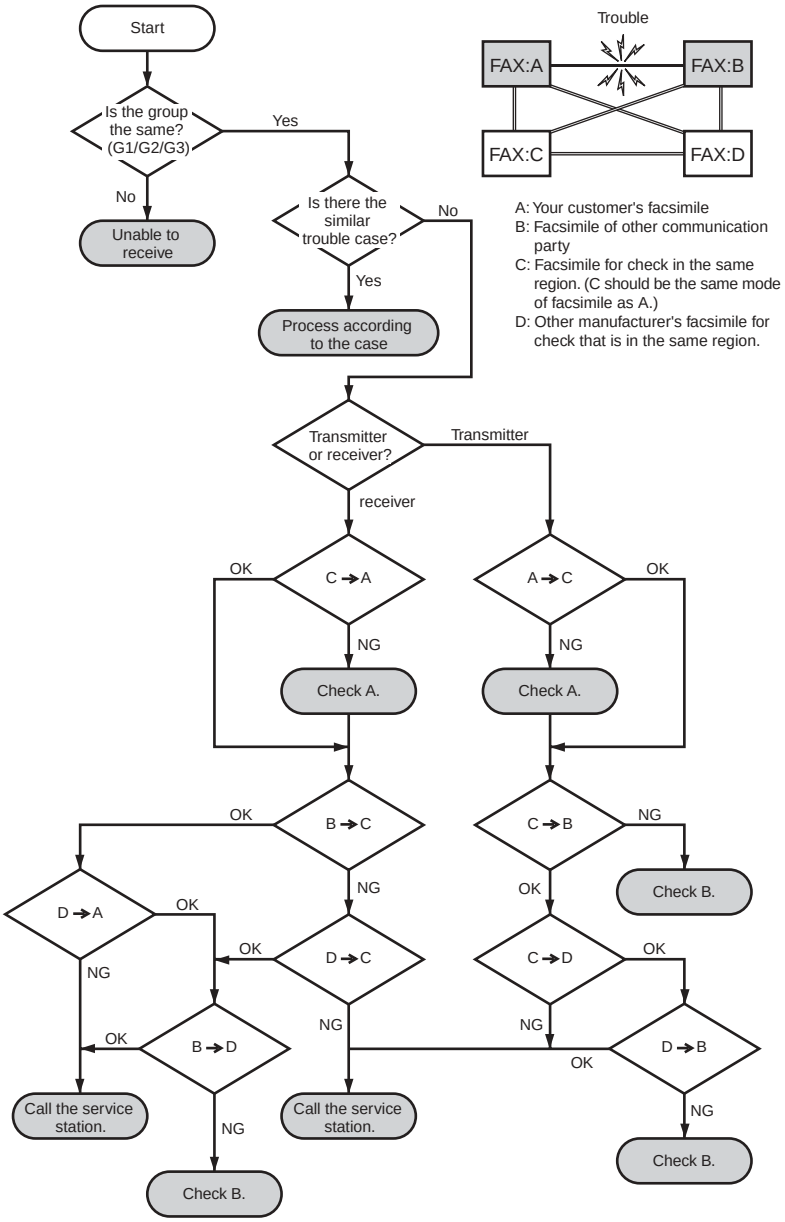
* Procedures for processing communication problems with Canon facsimile.
The process for carrying out communications at three points as shown in the figure.




F-5-5

* Procedures for processing communication problems with other manufacturer's facsimiles.

When problems occur with other manufacturer's facsimiles, make the user of the other party's facsimile call the serviceman in charge. Perform communication at the four points listed in the figure.


Start
Is the group the same? (G1/G2/G3)
Yes
No
Unable to receive
Is there the similar trouble case?
No
Yes
Process according to the case
Trouble
FAX:A
FAX:B
FAX:C
FAX:D
A: Your customer's facsimile
B: Facsimile of other communication party
C: Facsimile for check in the same region. (C should be the same mode of facsimile as A.)
D: Other manufacturer's facsimile for check that is in the same region.
Transmitter or receiver?
Transmitter
receiver
C → A
OK
NG
Check A.
A → C
OK
NG
Check A.
B → C
OK
NG
C → B
NG
OK
Check B.
D → A
OK
NG
D → C
OK
NG
C → D
OK
NG
B → D
OK
NG
D → B
OK
NG
Call the service station.
Call the service station.
Check B.
Check B.

F-5-6

# 5.7 Test Functions

## 5.7.1 Test Mode Overviw

0004-3256

Test mode can be executed by following the menu items from the display.

a) DRAM test
Writes data to DRAM image storage areas and read that data to check operations.

b) PRINT test
Prints test patterns within the print area.

c) Modem, NCU tests
The frequency test and the G3 signal transmission and CNG signal and DTMF signals reception tests.

d) FACULTY test
Test the operation of operation panel and sensor functions.

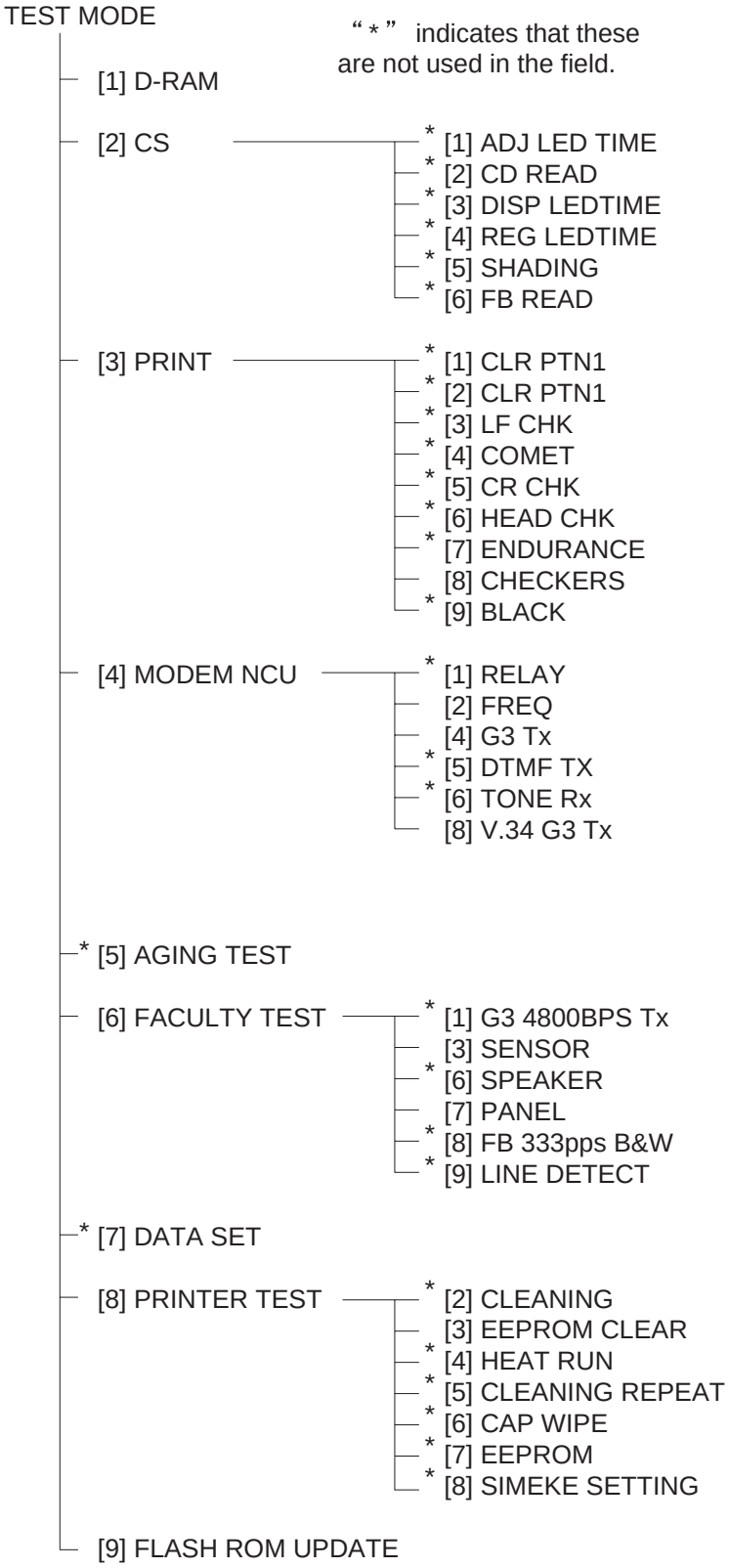
e) PRINTER test
Ink absorber capacity is reset.

f) FLASH ROM UPDATE
Perform version upgrade of ROM.

## 5.7.2 Test Mode Flowchart

0004-3252

This machine is equipped with the test mode to check operations of variouse functions listed below. Please refer to Service Data Registration/Setting for instructions to select the test mode. Press the [Stop/Reset] key and then the [ON/OFF] key to end the test mode.

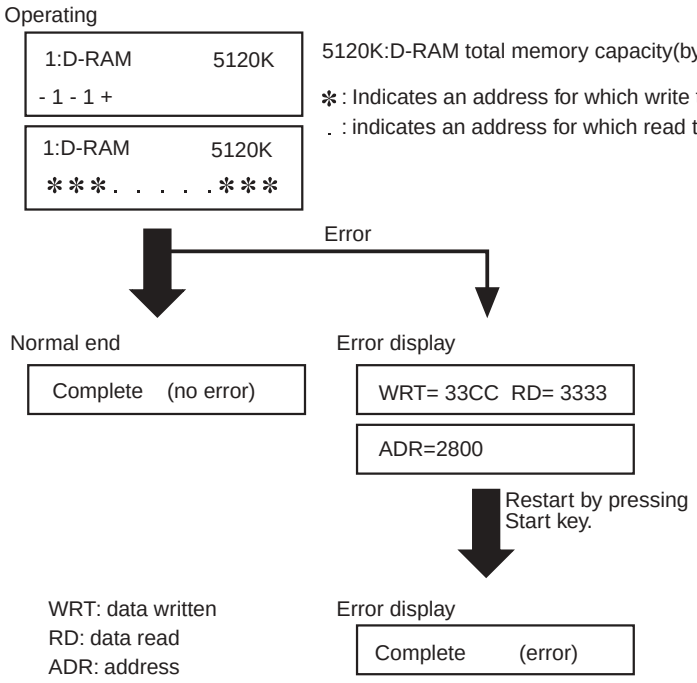

TEST MODE
" * " indicates that these are not used in the field.
[1] D-RAM
[2] CS
* [1] ADJ LED TIME
* [2] CD READ
* [3] DISP LEDTIME
* [4] REG LEDTIME
* [5] SHADING
* [6] FB READ
[3] PRINT
* [1] CLR PTN1
* [2] CLR PTN1
* [3] LF CHK
* [4] COMET
* [5] CR CHK
* [6] HEAD CHK
* [7] ENDURANCE
[8] CHECKERS
* [9] BLACK
[4] MODEM NCU
* [1] RELAY
[2] FREQ
[4] G3 Tx
* [5] DTMF TX
* [6] TONE Rx
[8] V.34 G3 Tx
* [5] AGING TEST
[6] FACULTY TEST
* [1] G3 4800BPS Tx
[3] SENSOR
* [6] SPEAKER
[7] PANEL
* [8] FB 333pps B&W
* [9] LINE DETECT
* [7] DATA SET
[8] PRINTER TEST
* [2] CLEANING
[3] EEPROM CLEAR
* [4] HEAT RUN
* [5] CLEANING REPEAT
* [6] CAP WIPE
* [7] EEPROM
* [8] SIMEKE SETTING
[9] FLASH ROM UPDATE

F-5-7

## 5.7.3 DRAM Tests

0004-4269

Pressing the numeric key 1 or ◀▶ key from the test mode menu selects the D-RAM tests. D-RAM Test 1 writes data to the entire D-RAM region and reads it out to check that operations are correct. DRAM Test 2 just reads data at high speed.
Replace the SPCNT board if an error occur.

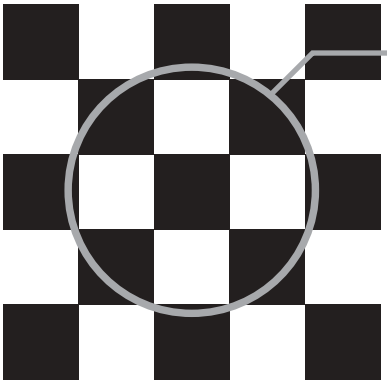



F-5-8

## 5.7.4 PRINT Tests

0004-4265

Pressing the 3 key or ◀▶ key from the test mode menu selects the print test. This test prints various patterns. For servicing, use the 3-8: CHECKERS pattern (press the 8 key ◀▶ key from the print test menu). The other patterns are not to be used since they are for development and factory
personnel. End this test by pressing the Stop/Reset key.
Check the pattern for the following:


Check for any vertical or horizontal white stripes on the black squares.
Also, check that all the squares have straight edges on all four sides.

F-5-9

NOTE:
If the print test is normal, make a copy of a document. If the copy is faulty, the reading section is faulty.

⚠

Please do not select the following menu:
3-1: CLR PTN1, 3-2: CLR PTN2
If a mistake is made and these menus are selected, the value of #7 PRINTER #5. INK ABS CAPA will be reset to 0%.
Replace the waste ink absorber and set to 0% in TEST mode.

## 5.7.5 FACULTY Tests

0004-3395

The faculty tests are selected by pressing the numeric key 6 or ◀▶ key from the test mode menu.
These tests check for the following faculties of the machine.

T-5-3

| Test Type | Overview |
|---|---|
| Sensor tests | Test whether the sensors are operating correctly. |
| Operation panel test | Tests whether the key switches on the control panel are operating correctly. |
| Line signal reception test | Tests whether the NCU board signal sensor and frequency counter are operating correctly. |

a) Sensor tests

Select the sensor test from the faculty test menu by pressing the numeric key 3 or ◀▶ keys. In this test, you can check the status of each sensor of this fax in item 1 on the display. You can also check if sensors that use actuators and microswitch are operating correctly by moving the actuator or microswitch.

---

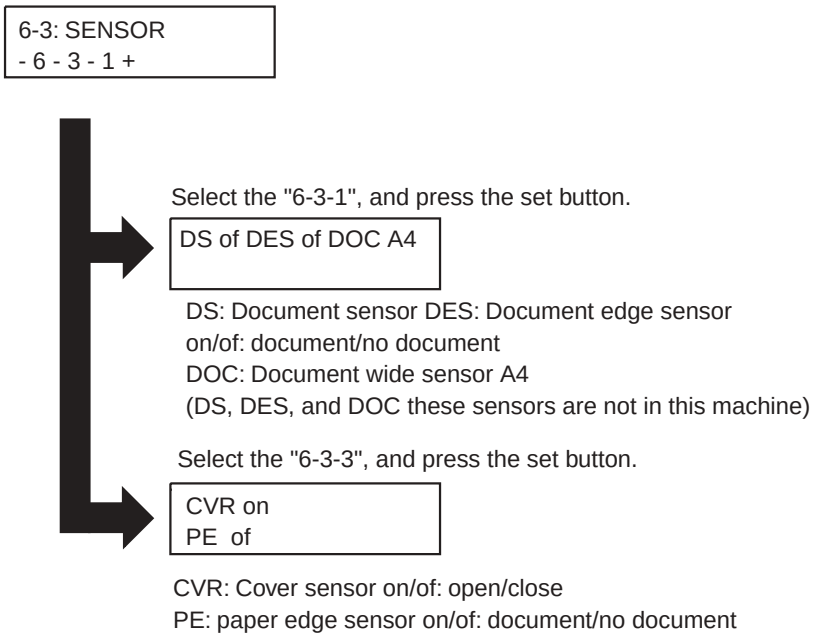
NOTE:

The sensor tests cannot be used to test all of the sensors. The following sensors cannot be tested with the sensor tests:

Pickup sensor

If any of above sensors are faulty, an error message or service error code will appear to indicate the faulty sensor.

---


6-3: SENSOR
- 6 - 3 - 1 +
Select the "6-3-1", and press the set button.
DS of DES of DOC A4
DS: Document sensor DES: Document edge sensor
on/of: document/no document
DOC: Document wide sensor A4
(DS, DES, and DOC these sensors are not in this machine)
Select the "6-3-3", and press the set button.
CVR on
PE of
CVR: Cover sensor on/of: open/close
PE: paper edge sensor on/of: document/no document

F-5-10

b) Operation panel tests

Press the numeric key 7 or ◀ and ▶ key form the faculty to select 6-7:operation panel tests from the faculty test menu. In this test, check that the display, LED lamps, and keys on the control pane are operating correctly.

b-1) Display test

If you press Start key in the menu of the operation panel, 20 letters of "H" are displayed in two lines. If you press Start key one more time, all the LCD dots are displayed. If you press Stat key again, "_"is displayed. Check if there are no LCD dots that are not displayed by performing this operation.

b-2) LED lamp test

Press the Start key to select the LED lamp test after the display test is complete.

When the Start key is pressed, all the lamps on the control panel light. Check for any LED that does not light during

the test.

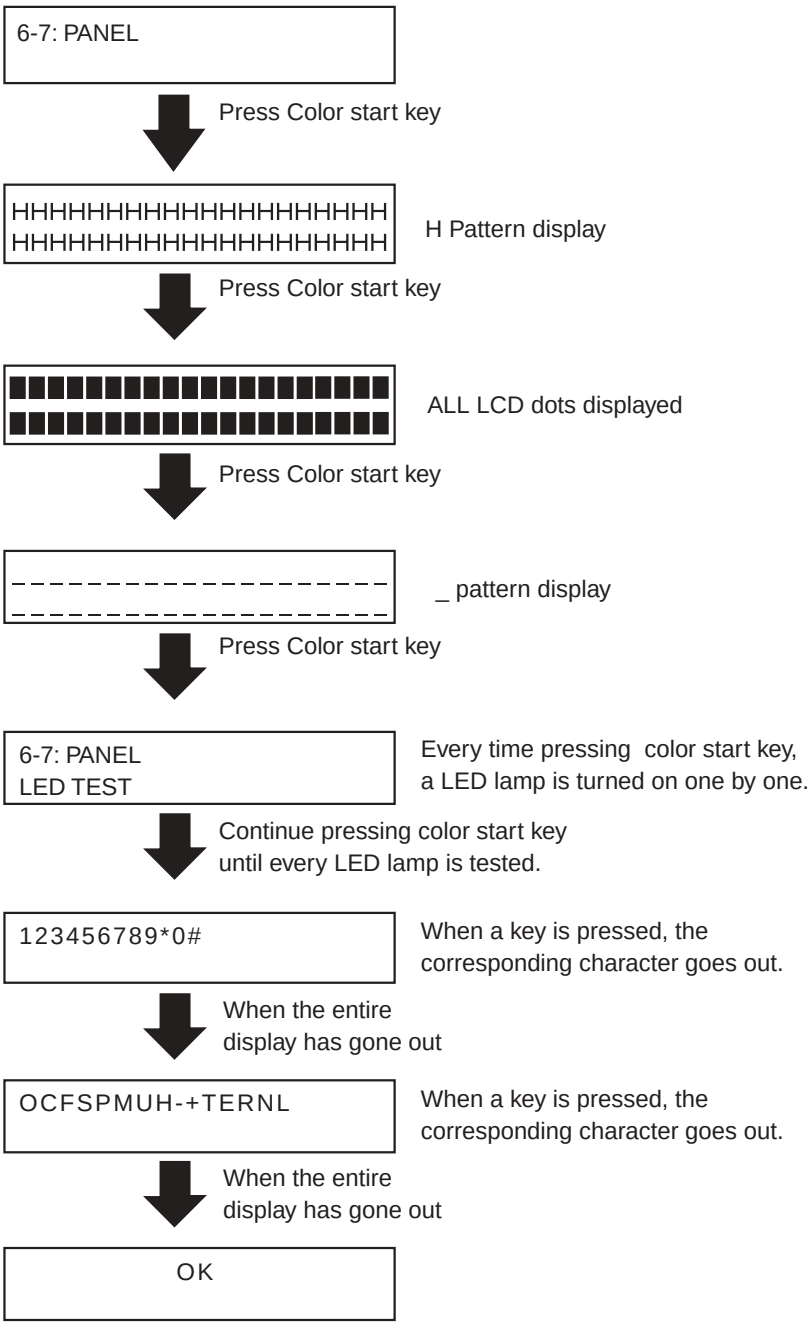
b-3) Operation key test

Press the Start key to select the Operation key test after the LED lamp test is complete.

In this test, you press the key corresponding to the displayed character to put it out. The table giving the correspondence between the characters and the keys is shown below.

T-5-4

| Character | Operation key | Character | Operation key |
|---|---|---|---|
| O | ON/OFF key | C | COPY key |
| F | FAX key | S | SCAN key |
| P | PHOTO PRINT key | M | Additional Function key |
| U | Menu key | H | Photo Index Key |
| - | ◀ key | + | ▶ Key |
| T | Directory | E | Set |
| R | Redial/Pause | N | Black key |
| L | Color key | | |




F-5-11

c) Line signal reception test

The line detect test menu is selected by pressing the numeric key 9 or ◀ key and ▶ key from the faculty test menu. This test checks the operation of the NCU signal sensor and frequency counter. In Menu 1, the CI, status can be detected and in Menu 2 the frequency can be detected at changing detection levels.

c-1) Test Menu 1

Test Menu 1 is selected by pressing the numeric key 1 or ◀ key and ▶ key from the Line Detect menu. When CI, and

CNG are detected from the modular jack, the display changes from OFF to ON and the received frequency is displayed.

c-2) Test Menu 2

Test Menu 2 is selected by pressing the numeric key 2 or ◀ key and ▶ key from the Line Detect menu. When a tonal frequency is detected from the modular jack, the display changes from OFF to ON and the received frequency is displayed. The frequency detection level can be set with the numeric keys.

T-5-5

| Numeric key | Detection level (dBm) |
|---|---|
| 0 | -26 |
| 1 | -30 |
| 2 | -32 |
| 3 | -35 |
| 4 | -38 |
| 5 | -41 |
| 6 | -43 |
| 7 | -45 |
| 8 | -47 |
| 9 | -51 |

c-3) Test Menu 3

Test Menu 3 is selected by pressing the numeric key 3 or ◀ key and ▶ key from the Line Detect menu. When CNG is detected from the modular jack, the display changes from OFF to ON.

## 5.7.6 PRINTER Tests

0004-4237

Select 8:PRINTER TEST from the test mode menu by pressing the numeric key 8 or ◀ and ▶ keys. Select 8-3:EEPROM CLEAR, and the press the numeric key 3 or ◀ and ▶ keys. Select [0] INK COUNT, and then press the numeric key 0 or ◀ and ▶ keys to reset the waste ink capacity.

Note:

Be sure to reset waste ink capacity only when replacing the waste ink absorbing material to a new one. If waste ink capacity is reset in other situations, it may result in faulty caunt.

## 5.7.7 MODEM, NCU Tests

0004-3320

The Modem and NCU Test menu is selected by pressing the numeric key 4 or ◀ and ▶ from the test mode menu. These tests test modem and NCU transmission and reception. The modem tests check whether signals are sent correctly from the modem by comparing the sound of the signals from the speaker with the sounds from a normal modem. Also, you check on the display whether or not the modem correctly detected received tone signals and DTMF signals.
End this test by pressing the Stop/Reset key.

T-5-6

| Modem test type | Overview |
|---|---|
| Frequency test | The modem sends tonal signals from the modular jack and the speaker. |
| G3 signal transmission test | The modem sends G3 signals from the modular jack and the speaker. |
| V.34 G3 signal transmission test | The modem sends V.34 G3 signals from the modular jack and the speaker. |

a) Frequency test

The frequency test menu is selected by pressing the numeric key 2 or ◀ and ▶ keys from the MODEM NCU test menu. Signals of the frequencies below are sent from the modem using the modular jack and the speaker. The frequency can be changed with the numeric keys.

T-5-7

| Numeric key | Frequency |
|---|---|
| 1 | 462 Hz |
| 2 | 1100 Hz |
| 3 | 1300 Hz |
| 4 | 1500 Hz |
| 5 | 1650 Hz |
| 6 | 1850 Hz |
| 7 | 2100 Hz |

NOTE:
The transmission levels for each frequency follow the service data transmission level settings.

b) G3 signal transmission test

The G3 signal transmission test menu is selected by pressing the numeric key 4 or ◀ and ▶ keys from the MODEM NCU test menu. The G3 signals below are sent from the modem using the modular jack and the speaker. The frequency can be changed with the numeric key.

T-5-8

| Numeric key | Speed |
|---|---|
| 0 | 300 bps |
| 1 | 2400 bps |
| 2 | 4800 bps |
| 3 | 7200 bps |
| 4 | 9600 bps |
| 5 | TC7200 bps |
| 6 | TC9600 bps |
| 7 | 12000 bps |
| 8 | 1440 bps |

NOTE:
The transmission level for each frequency follows the service data.

c) V.34 G3 signal transmission test

The V.34 G3 signal transmission test menu is selected by pressing the numeric key 8 ◀ and ▶ keys from the MODEM NCU test menu. The V.34 G3 signals below are sent from the modem using the modular jack and the speaker by pressing the Start key. The Baud rate can be changed with the numeric keys, and the Speed can be changed with the search keys.

T-5-9

| Numeric key | Baud rate |
|---|---|
| 0 | 3429 baud |
| 1 | 3200 baud |
| 2 | 3000 baud |
| 3 | 2800 baud |

| Numeric key | Baud rate |
|---|---|
| 4 | 2743 baud |
| 5 | 2400 baud |

T-5-10

| Numeric key | SPEED |
|---|---|
| | 33.6 kbps |
| | 31.2 kbps |
| | 28.8 kbps |
| | 26.4 kbps |
| ◀ ▶ | 24.0 kbps |
| | 21.6 kbps |
| | 19.2 kbps |
| | 16.8 kbps |
| | 14.4 kbps |
| | 12.0 kbps |
| | 9.6 kbps |
| | 7.2 kbps |
| | 4.8 kbps |
| | 2.4 kbps |

# Chapter 6 Appendix

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# 6.1 Main Body

## 6.1.1 Installation

0002-0817

Reference:
This machine is to be installed by a user, so this service manual contains only a briefing of installation procedures.
Please refer to the Set-up Sheet enclosed in the package of the machine for more details.

* Check an installation space.
* Unpack the machine, and check the attachments
  Make sure none is missing and there is no damage.
* Remove the package material
  Remove all tape and protective material used on the machine.
* Connect the cable
  Connect the telephone line and any necessary external device.
* Turn on the power
  Connect the power cord. If the machine is not turn on, press [ON/OFF] to turn on the machine.
* Load paper
  Place a stack of paper in the multi-purpose tray.
* Install the printhead
  Remove the protective cap, and then install the printhead into the holder.
* Install the ink tanks
  Pull the tape and remove the protective cap, and then install the ink tanks. After install, align the printhead.
* Install the software
Install the software in the computer.
* Connect the USB cable
Connect the USB cable to complete the computer settings.
* Setting for facsimile (for MP390)
Register the date and time, unit telephone number, and unit name.

## 6.1.2 Checking Operation

0002-0824

* Check the level of quality for both reading and printing.
  Make a copy, and see if it is free of a fault for both reading and printing.
* Conduct a communications test. (For MP390)
Send and receive a fax by connecting to another fax machine, making sure that the image is normally sent and the received image is normally printed.

⚠

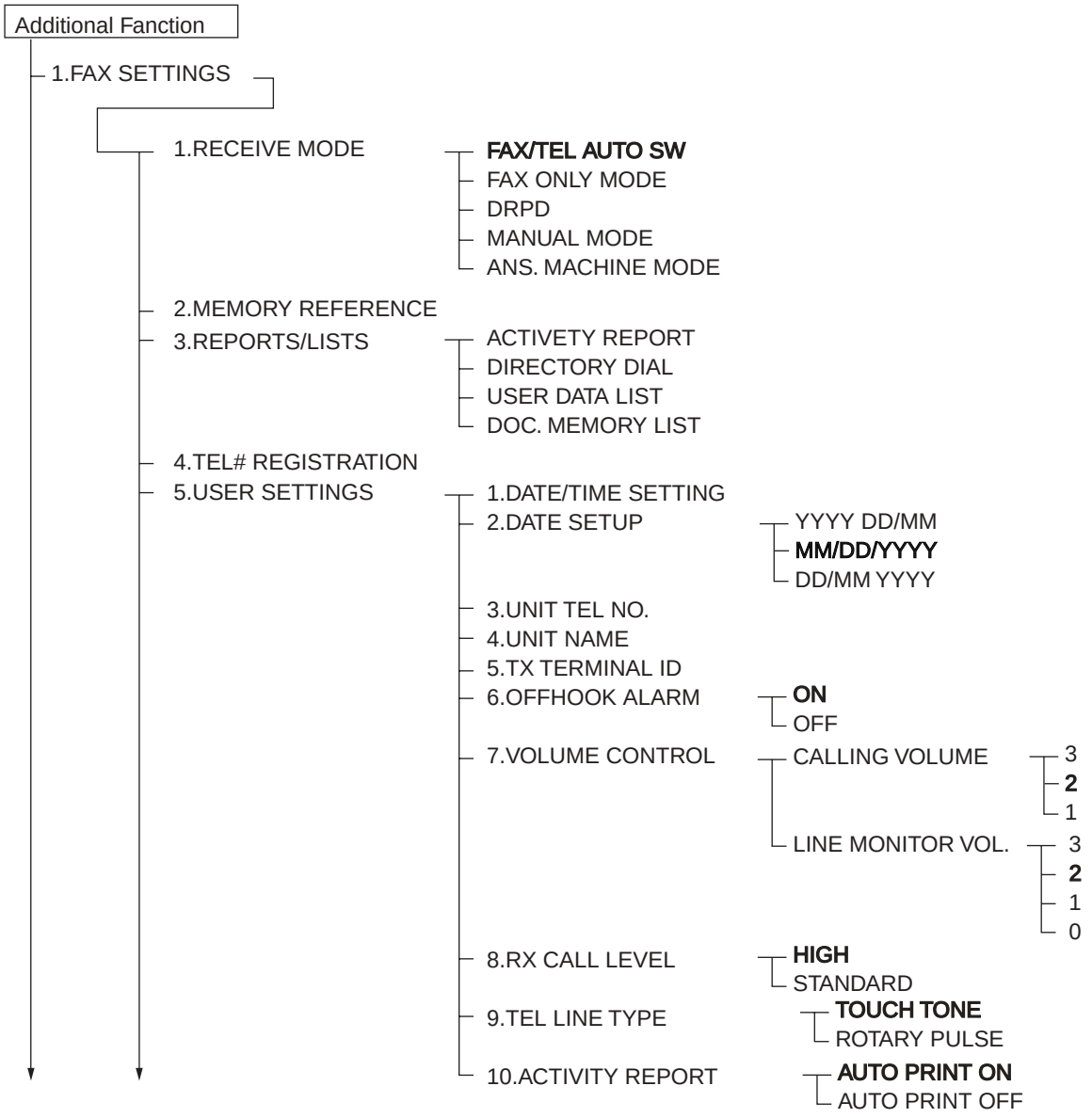
**What to do when trouble occurs**

Very rarely, during use, the display may go out, all the buttons may stop working, or some other trouble may occur because of strong electrical noise or a large amount of static. If such trouble occurs, execute 'All clear'.

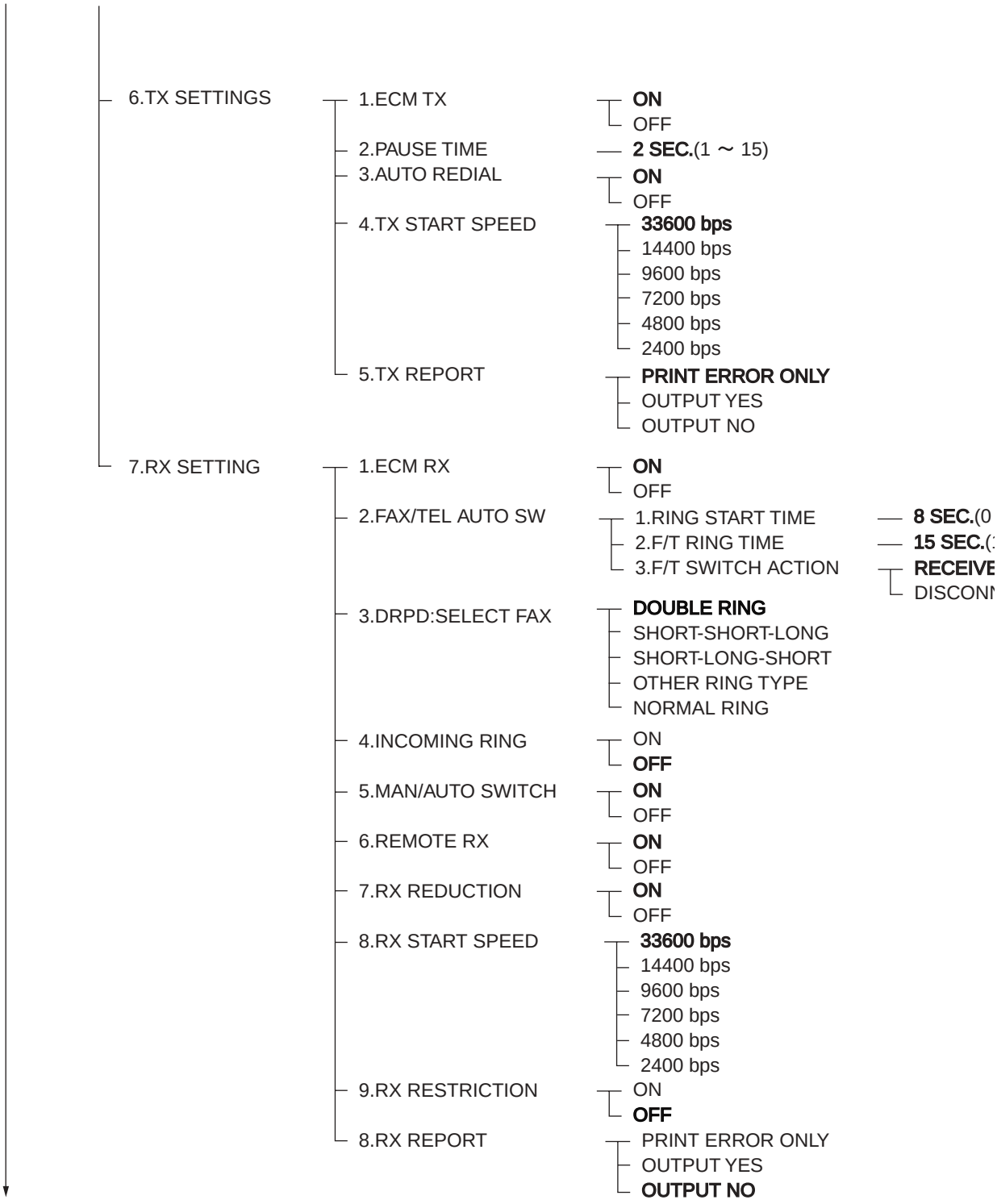
# 6.2 User Data Flow

## 6.2.1 User Mode Settings

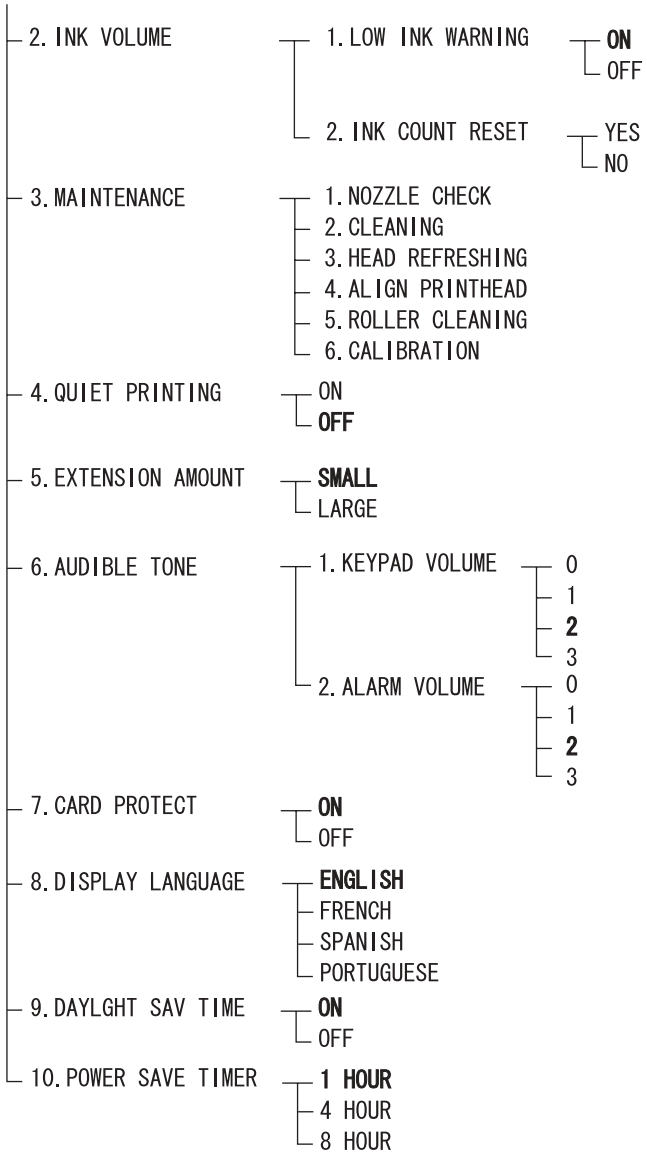
0004-3904




F-6-1


6.TX SETTINGS
1.ECM TX
ON
OFF
2.PAUSE TIME
2 SEC.(1 ～ 15)
3.AUTO REDIAL
ON
OFF
4.TX START SPEED
33600 bps
14400 bps
9600 bps
7200 bps
4800 bps
2400 bps
5.TX REPORT
PRINT ERROR ONLY
OUTPUT YES
OUTPUT NO
7.RX SETTING
1.ECM RX
ON
OFF
2.FAX/TEL AUTO SW
1.RING START TIME
8 SEC.(0
2.F/T RING TIME
15 SEC.(
3.F/T SWITCH ACTION
RECEIVE
DISCONN
3.DRPD:SELECT FAX
DOUBLE RING
SHORT-SHORT-LONG
SHORT-LONG-SHORT
OTHER RING TYPE
NORMAL RING
4.INCOMING RING
ON
OFF
5.MAN/AUTO SWITCH
ON
OFF
6.REMOTE RX
ON
OFF
7.RX REDUCTION
ON
OFF
8.RX START SPEED
33600 bps
14400 bps
9600 bps
7200 bps
4800 bps
2400 bps
9.RX RESTRICTION
ON
OFF
8.RX REPORT
PRINT ERROR ONLY
OUTPUT YES
OUTPUT NO

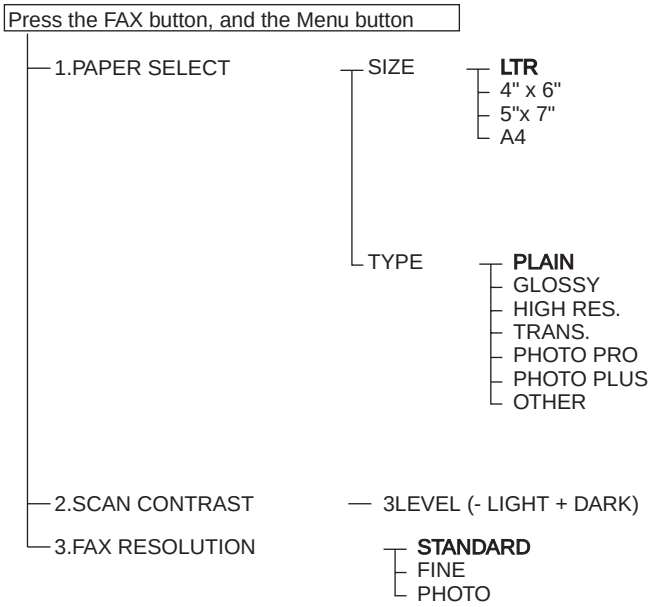
F-6-2


2. INK VOLUME
1. LOW INK WARNING
ON
OFF
2. INK COUNT RESET
YES
NO
3. MAINTENANCE
1. NOZZLE CHECK
2. CLEANING
3. HEAD REFRESHING
4. ALIGN PRINTHEAD
5. ROLLER CLEANING
6. CALIBRATION
4. QUIET PRINTING
ON
OFF
5. EXTENSION AMOUNT
SMALL
LARGE
6. AUDIBLE TONE
1. KEYPAD VOLUME
0
1
2
3
2. ALARM VOLUME
0
1
2
3
7. CARD PROTECT
ON
OFF
8. DISPLAY LANGUAGE
ENGLISH
FRENCH
SPANISH
PORTUGUESE
9. DAYLGHT SAV TIME
ON
OFF
10. POWER SAVE TIMER
1 HOUR
4 HOUR
8 HOUR

F-6-3

## 6.2.2 Fax Mode Settings

0004-3907

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Jan 7 2004

Canon